

DAILY METAL REPORTER

MONTHLY SUPPLEMENT

METALS

Published Since 1929

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By SIR RONALD L. PRAIN, Chairman
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By L. H. TARRING
London, England

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WASHINGTON REPORT

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MARCH
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Registered U. S. Patent Office
Published Monthly Since 1929

Charles H. Lipsett
Publisher
Dr. J. Zimmerman
Editor
M. Goldfischer
Associate Editor

Monthly Supplement of
Daily Metal Reporter
March 26, 1959

MARCH, 1959

Vol. 29 — No. 9

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METALS — 425 West 25th Street, New York 1, N. Y.

Published by the National Business Press, Inc.
Phone: WATkins 4-0660

Cable Address: ATPUBCO, New York

Branches: Washington, Philadelphia, Chicago, Boston

London Office: 81 Highview Ave., Edgware, Middlesex, England

Cable Address: ATPUBCO, London

Affiliated Publications: Daily Metal Reporter, Daily Mill Stock Reporter,
Waste Trade Journal, Waste Trade Directory, Standard Metal Directory,
Mines Register, World's Waste Trade Directory, Sales (Weekly).

Two LINE Editorials

Wouldn't it be nice if, when paying our income tax, we could designate the foreign country we would prefer to have our money given to?

"All stocks do not always go up", says a prominent financial adviser. There are lots of stock market players, however, who will never believe any such heresy as that.

Some Democratic editors are insisting that Mr. Adlai Stevenson would make the best candidate in 1960. Well, anyhow, he's had more experience as a candidate than any of the others mentioned.

Britain and America, a political writer points out, are the principal potential customers for the Middle East's oil. Mr. Nasser, however, does not seem to be one of those who thinks that the customer is always right.

International Geophysical Year research has developed the fact that the earth is covered with 40% more snow and ice than formerly believed. No wonder the cold war is continuing so long.

Washington scientists report the discovery that the deer fly can travel 70 miles an hour instead of 800 miles an hour as previously thought. Now who can say that our scientific achievements are lagging?

Washington Report



March 17, 1959

METALS did not play an important part in the news from Washington during the month in review. Congress was preoccupied with such matters as the crisis in Berlin, the battle over the budget and the admission of Hawaii as the fiftieth State. However some legislation of special interest to the mineral industries was introduced.

Senator Gordon Allitt (Rep., Colo.) offered on behalf of himself and ten other senators a bill (S. 1285) designed to aid domestic producers of fluorspar. This bill was seen as a possible pattern for aid to other domestic mineral and metal industries, including possibly lead, zinc, copper, aluminum and tungsten.

Under terms of the proposed measure, a fixed portion of domestic consumption would be set aside to be filled by domestic producers. The remainder would be divided among foreign producers on the basis of their historic share of the U.S. market. In general, this is the way the Sugar Act operates. Thus far there has been no indication of how the Administration feels about the fluorspar proposal. The House and Senate Interior committees have asked the State, Commerce and Interior Departments and the Budget Bureau to give their views within 20 days on the proposal.

No Copper Action Seen

In view of the tight copper supply situation and the fears of a runaway market, some fabricators are reported to have sounded out Washington officials as to whether the Administration can offer any relief.

Since the U.S. import duty of 1.7c a pound is one of the stumbling blocks that is keeping foreign copper out of this market, the question has been raised as to what can be done about this duty. A survey among Senators and Congressmen reveals that no legislator from the Western mining states would sponsor a measure to suspend the import duty on copper. In some quarters it was intimated that if a legislator not from a mining State were to introduce legislation suspending the import duty of 1.7c for a period of one year with the proviso that the peril point be raised, it might get the

support of the Department of Commerce and of the State Department. But such legislation would take time and would not be of immediate help to the market.

Tapping DPA Copper Inventory

Another suggestion that has been advanced is that the Government release some of the copper that it acquired by DPA funds from producers who had floor contracts at prices that were much higher than the market quotations. Since there have been no funds with which to buy copper for the stockpile, this metal is still available and is not subject to the strict regulations governing copper in the stockpile.

Informed quarters in Washington expressed doubt as to whether the Administration would favor such action. The Department of Labor, it was stated, would be definitely against it and so would the legislators from the mining states.

In Administration circles the feeling prevails that the present situation serious as it is, may blow over shortly. Should there be peace in the industry, it is stated, the copper shortage is likely to be replaced by a copper surplus and this may happen before the year is over. Legislation and Government intervention, it is claimed, should be on a long-term basis.

The sum and substance of the Washington survey is that while the present situation has created a good deal of interest in the capital and has given rise to many surmises, no immediate remedial action to ease the tight supply situation is likely to be forthcoming.

Sees Lead, Zinc Aid

Some steps will be taken during the current session of Congress to aid the ailing domestic lead and zinc mining

industries. Senator Wallace F. Bennett (Rep., Utah), told Metals.

"The import quotas imposed by President Eisenhower had a salutary initial effect, but the prices are again going down," Senator Bennett said. "Undoubtedly some steps will be taken in this session, but these could involve an appearance before the Tariff Commission and the Office of Civil and Defense Mobilization rather than the legislative route."

The Utah Republican said that the "uranium battle will apparently be fought with the Atomic Energy Commission, although Congressional hearings are furnishing a sounding board to the industry."

Senator Bennett said that the new uranium policy "is causing concern in Utah, since it will involve the possible closing of the commission's mill at Monticello and some stretching out of existing contracts. There is also opposition to foreign imports."

Consider Uranium Stretch-out

The Atomic Energy Commission has started discussing with industry the possibility of "stretching out" its uranium purchase program to reduce the government's total uranium bill over the next three fiscal years by as much as \$50,000,000 a year.

The "stretch-out" would be limited to large mining-milling concerns and would not affect smaller, independent uranium operators. The big companies already are organizing their opposition.

Atomic Energy Commission officials note that uranium output in fiscal 1960, 1961 and 1962 will be greater than it has plans to use. The AEC proposal is to cut back in those years and then add to purchases in later years an amount equal to the cut-back.

The nation's total uranium bill for material covered under long-term contracts has been rising rapidly.

Including contracted imports from Canada and South Africa which account for more than half the total, uranium procurement cost \$356,500,000 in fiscal 1957 and \$558,600,000 in fiscal 1958, ended last June 30.

It is estimated the program will cost \$696,900,000 in the current fiscal year and \$739,600,000 in fiscal 1960, more than double the fiscal 1957 figure.

The "stretch-out" talks to reduce the future uranium load are still informal and the AEC has made no decision yet.

U.S. uranium producers and political representatives of both parties from western states oppose extension of foreign purchase contracts as long

(Continued on Page 16)

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The Future of the Copper Industry

By **SIR RONALD L. PRAIN**, Chairman, Rhodesian Selection Trust, Ltd.

During the past two years or so our companies have made a number of separate studies dealing with different aspects concerning the future of the copper industry. When you kindly invited me to speak to you today I thought I would make an attempt to put some of these studies together, to see whether we could get a composite picture of some of the factors affecting the future of copper, and then present this picture to you in the shortest possible form.

Let me say at the outset that I fully realize that many others in the copper industry are undoubtedly making their own studies on these same matters, and we therefore claim no exclusiveness in these researches. I offer you some of our conclusions in order to stimulate discussion and to give others an opportunity to tell us where they think we may be wrong.

May I also say at the outset that I fully realize the danger that an address like this will be treated as a piece of crystal-gazing. I have to accept this risk of misunderstanding, but I believe you will all here realize that it is not a matter so much of crystal-gazing as of trying to make estimates of what might occur in certain respects and in certain circumstances, based on the experience of the past. My picture is not intended to present the short view or the very long, but to examine the middle distance.

Summary of Views

I shall start by summarizing our views and tentative conclusions as follows, and then I will go back and deal with each heading separately.

(1) Copper appears to have a most promising future and growth factor provided, however, that the price is not allowed to go above certain levels.

(2) If the price is allowed to exceed these substitution points for any length of time consumption will begin to be increasingly affected and production excesses will occur on an increasing scale.

(3) If the price, on the other hand, is allowed to go below certain levels for any length of time, new productions may not be forthcoming on the scale which the normal growth factor will require, and thus production shortages will begin to appear.

(4) In the absence of any planning by the industry the usual laws of supply and demand will take care of the situation in the future as they have done in the past. That is to say, increases in price will carry in them the



SIR RONALD L. PRAIN

seeds of recession, and falls in the price of copper will carry in them the seeds of recovery. But the time-lag which occurs before these laws come into full operation will mean, unless the industry has some plans, that we shall see the usual large price fluctuations occurring again in future and we question whether, in view of some new factors in the copper situation, consumers will tolerate such behaviour as readily in the future as in the past.

(5) For this reason the copper industry would be well-advised to adopt production policies designed not only to damp down these excessive fluctuations, but to apply corrective measures with a greater rapidity than can be done by the laws of supply and demand unaccompanied by deliberate action. The regulation policy I have in mind is curtailment on a voluntary basis by the mining industry if consumption is falling, and the complementary act of increasing production when consumption picks up again.

(6) Assuming that by such methods price fluctuations are kept within limits, and the maximum price of copper kept within bounds which will not encourage substitution, the indicated growth factor is such that it should permit the bringing into production of most of the known ore reserves within the next decade.

(7) The increases in capacity which are presently planned will mean a net 15 per cent increase in mine capacity between the years 1957 and 1962, with no appreciable increase in either the average cost of production or the maximum cost.

(8) The discovery rate of ore reserves as established during the last forty years will have to be increased during the next decade to cater for the projected growth rate of consumption, that is to say, to create the necessary additional production in the second decade after this.

(9) Based on these projections the capital investment in the copper industry between 1957 and 1970 including projects now under development might be as much as 3 billion dollars on the basis of present monetary values.

I shall now go back and amplify some of these tentative conclusions.

The first one dealt with the prospects for the future consumption of copper.

Consumption Prospects

There are various methods which are employed or can be employed for arriving at estimates of future consumption of this metal. We have examined most of the known methods and have arrived at some estimates which represent approximately the average result produced by these methods. I will not define these as I am not an economist or a statistician and I do not want to get involved in a discussion as to methods. I can, however, say that we have worked along the following lines and with the following results.

(a) Historically the growth of world copper consumption from 1880 to the end of World War I averaged between 5 and 6 per cent per annum, then slowed down to under 2 per cent per annum in the inter-war era. Since 1946 the growth has averaged nearly 4 per cent per annum.

(b) Free world consumption of refined copper appears to bear a close relationship to real national income which, broadly speaking, is population multiplied by standard of living.

(c) Whilst this is true of refined consumption in the free world as a whole, the situation in the United States differs from that in the non-dollar countries of the free world. In the United States growth in refined copper consumption has not kept pace with that of general economic growth, the post-war loss against real national income in the dollar area having averaged 2.6 per cent per annum.

In the non-dollar countries of the free world growth of refined copper consumption has been faster than that of real national income; we would expect this trend to continue for some more years, after which growth in consumption may become slower than that of real national income.

(d) We have reduced estimated total free world refined consumption to a demand for primary metal by subtracting copper which may be ex-

Text of address delivered before Mining Club of New York on Feb. 4, 1959.

pected to come from secondary sources. We examined three different methods commonly used for estimating production from scrap and found two of them, when projected, gave almost identical answers, and it is the projections given by these two methods that we have used for subtraction purposes.

We do not think that any of the three methods of projecting secondary production is ideal and we suggest that there remains considerable room for research on the subject of statistics on scrap, both new and old.

(e) The result of these studies shows that the demand for primary copper might increase from about 3½ million tons in 1960 to about 5 million tons in 1970.

I hesitate to reduce to figures any opinion as to demand after 1970, but it is, I think, admissible to say that the growth factor, based on the expected growth of free world real income, and adjusted for various factors which I need not enumerate here, continues to show a rising trend during the decade 1970/80.

If I say much more under this heading I shall get involved in the classical arguments which economists get involved in, so I will sum up this part by saying that we may expect an increase in annual demand for primary copper between 1960 and 1970 of over 1½ million tons, provided there is no abnormal increase in substitution by other materials; thereafter we may expect demand to continue to rise.

Copper Prices

Turning now to (2) of my summary, I do not myself believe that the price of copper is high. The decrease in the value of money has given us a distorted impression of the price of copper. I recently made a study of the sterling price of copper for each year of the last hundred years and I converted the average price of each year into constant values in terms of the price of gold of the year 1858. This study showed that in terms of such constant values the price of copper of 1958 has been exceeded in no less than 41 years out of the last hundred years.

This might again get me involved with the economists, but I mention it to show that, in my opinion, the price of copper is not excessive, and the real problem for the copper market has arisen from the fact that it is only in the last quarter century, and particularly since World War II, that copper has had increasingly to face a new feature which hardly existed previously, namely, the possibility of substitution by other materials. These materials are well-known to this audience and I will not spend time on them. I will confine myself to saying that there is no question that this threat is real and that it has begun to impose an entirely new discipline on the behaviour of the copper market and will do so increasingly from now on into the future. It is this factor which demands a re-assessment of the top price that copper can reach with impunity and we are slowly beginning to learn something about this.

In particular, I refer to the deliberations of the International Wrought Non-Ferrous Metals Council, which is a European organization consisting of representatives of most of the fabricators of all European countries ex-

cept Spain. This council has been meeting regularly for years, and more recently has instituted bi-annual meetings with representatives of any copper mining producers who care to attend. As a result I believe that the consumers of Europe today are becoming more aware of some of the economic facts of life affecting the mine production of copper; while the producers who attend these meetings are hoping to learn more about the substitution points experienced by these fabricators who, incidentally, represent a copper fabricating capacity of over two million tons a year.

Substitution Prices

The first, and on the whole elementary, conclusion that can be reached from the preliminary work of this council is that it is dangerous to talk of any one substitution point for copper. This point varies from use to use (and we all know there are many thousands of uses for copper), and it also varies from country to country since the price of copper, the price of labour and the price of substitutes are not the same in each country.

Furthermore, even if you could establish specific substitution points for each product for each country, this would not be the end of the exercise since there is at work a constant process of change in the price relationships between copper and its competitors.

For these reasons it is difficult to do more than arrive at generalizations. A start has just been made by the International Council to get authoritative generalizations and I can indicate to you, with the permission of the Council, some of the preliminary findings.

Returns were made by five countries, namely, Austria, Great Britain, Italy, Sweden and Switzerland, based on prices of £150 per ton, £200, £250 and so on at £50 intervals up to £400 per ton. In cents per pound this represents a range of about 20 to 50 cents. The generalizations to date appear to be as follows, based on present price relationships and monetary values:

(a) Very little substitution occurs below and up to the price of £250 per ton, i.e. 31¼ cents per pound.

(b) Above that point consumption of copper begins to fall off faster. Returns for these five countries show that a price of 50 cents per pound consumption of copper will be about 70 per cent of what it is at 31¼ cents (or 65 per cent of what it might be at 20 cents a pound).

(c) This composite result is arrived at from a study of various sections of the industry, all of which show a different experience factor. For instance, consumption of rolled metal appears to be by far the most vulnerable as prices go up. The decrease in consumption between 20 cents and 50 cents a pound is about 45 per cent. The consumption of rods and sections and of wire is less vulnerable, being about 30 per cent down between the same prices, while it appears that the least vulnerable is the consumption of copper and copper alloy tubes, which shows a 25 per cent decrease over the same price.

(d) The consumption of wire does not appear to be seriously affected until the price of copper rises to 40 cents a pound.

These statistics are now being improved upon by the inclusion of further countries and products, and it is hoped to maintain them in an up-to-date form which will take continuous account of changes in the price of substitutes and of monetary values. It would be interesting to know how experience in the U.S.A. compares with experience in Europe.

Before leaving the question of the International Council I might mention another valuable study now being developed which is a return by all the fabricators in these European countries of orders booked by them for the sale of their copper products. This will be expressed as a composite index figure taking the period January to June, 1958, as 100. It is hoped in this way to arrive at a new statistical service which will show at relatively short notice what is occurring in actual copper business being booked at any one time in Europe. If this can be developed successfully it should fill an important gap in our present statistical services, most of which suffer from a time lag due to the fact that they are based on movements of physical raw copper months after business in copper products is actually booked.

Copper Production

Turning now to items (3) and (7) of my opening summary, both of which dealt with copper production, it follows that if the price were to go too low the production necessary to satisfy an increasing consumption might not be forthcoming. We have made an elaborate study of the projected free world primary copper capacity through 1962, and without going into details of the basis on which we worked, I can say that our estimate shows that free world primary capacity, which in 1957 was 3.6 million tons, is expected to rise to 4.2 million tons in 1962. But the interesting point of this study arises from our estimates as to the cost of production and in particular the average cost of production. In 1957 this average cost was 18½ cents per lb. and our estimates show that it is unlikely to rise above 19 cents per lb. by 1962. If this estimate proves to be valid it is an important conclusion. As regards the upper range of estimated production costs, we figure that in 1957 the amount of copper produced at a cost of 30 cents per lb. or less totalled about 3.3 million tons, while in 1962 the expected capacity at or below the same cost, 30 cents, is just over 4 million tons. In other words, practically the whole increase in the next few years may be achieved at a cost not exceeding 30 cents per lb. with not more than ½ cent increase in the average cost.

I should emphasize that we have not taken into account in these calculations any further decline in the purchasing power of currencies. The weighted average cost which I have quoted is that of electrolytic copper delivered buyers after crediting by-products and after including depreciation. It does not, however, include income taxes, interest on loans, or amortization of borrowed capital, and finally I emphasize that the figures I have given are estimated costs and not copper prices.

Since the mining of copper over any long period must show a return to the investors, it would be in line with economic history that the price of

copper must be above the average cost of producing it and in most years above the cost of the marginal production. On the interesting theory which has been evolved by your distinguished member, Mr. Arthur Notman (the so-called Notman formula which is based on the average cost of production), the figures I have given you of average cost would indicate a long range price of copper averaging somewhere around 35 cents per lb. if it is necessary to win the tonnages I have indicated. I believe Mr. Notman is here today and if you have any questions on his formula please address them to him and not to me.

Production Policy

Turning now to items (4) and (5) of my opening summary in which I attempted to outline the problem of maintaining a copper price which would not be so high as to encourage substitution nor so low as to discourage production, I made a plea for the natural laws of supply and demand to be supplemented by some sort of production policy on the part of the copper industry. Please note my emphasis on the words "copper industry" because we have heard much of suggested regulation policy on the part of governments by means of commodity stocking schemes. I am personally highly distrustful of such schemes operated by governments and I prefer regulation, if it becomes necessary, by means of a production policy on the part of the industry as the best method of attempting to ensure the right price range. One of the major problems which could concern the copper industry in future years is what happens if the substitution points should fall while factors peculiar to the copper industry might cause the average cost of producing copper to rise in the years beyond the ones I have already referred to. This problem highlights the importance of, on the one hand, maintaining present costs of production, and on the other, the necessity for a greatly increased application of time, energy and money to research and development so that either new uses may be found for copper, or technological advances may be achieved whereby copper might even encroach on markets at present served by other materials. Furthermore, development policies should be co-ordinated throughout the free world, and I am glad to think that the last two years have seen a start to this policy which has led today to the existence of some dozen copper development organizations working throughout the free world on parallel lines. I must, however, add that in my opinion the budgets of such development associations are still far too small.

Ore Reserves

Turning now to items (6) and (8) which dealt with ore reserves, we have made a study which I have not seen carried out elsewhere, namely, to discover what is the pattern of the discovery rate of copper reserves. The method we adopted, which is probably crude but nevertheless a first attempt which no doubt will be improved upon by others, was to list discoveries made by decades from 1920 to the present and to compute the estimated metal production or capacity resulting

therefrom in later years. The definition of discovery date is that date at which it was recognized that an ore-body would be economic and viable in the foreseeable future rather than the date of physical discovery of mineralization. This study discloses the following interesting points.

During the twenties the average annual discovery rate was equivalent to an annual metal production capacity of 70,000 tons. The average grade, of over 3 per cent, is high by present discovery standards. In the thirties the average grade of ore discovered was only half that of the twenties, or 1½ per cent. The annual discovery rate for the thirties was equivalent to only 9,000 tons annual production (perhaps due to the depression which curtailed prospecting).

In the forties and the fifties to date the average grade discovered has been about 1 per cent. The average annual discovery rate in terms of ensuing annual production or expected capacity is 38,000 tons for the forties and 100,000 tons for the fifties, with a maximum possible annual capacity at the limit of 167,000 tons for discoveries in the fifties.

I appreciate, of course, that increases in production will come from four different sources, namely, expansion to existing mines; new mines which are scheduled for production in the near future; orebodies that have already been discovered but so far remain undeveloped; and future mines from undiscovered orebodies. I said at the outset that the indicated growth factor for copper was such that it should permit the bringing into production of most of the present known ore reserves within the next decade. In other words, we have dealt with the position of the first three of these groups. The question I am now addressing myself to is the discovery rate necessary to take care of the situation after the existing known reserves have been put to work. If new discoveries were to cease now it seems likely that a shortage of free world copper production might develop in the 1970's. Continuation of the present discovery rate may be sufficient to take care of the position until about the middle 1970's but it seems that to take care of it thereafter the discovery rate will have to be stepped up. In arriving at these estimates we have taken account of mine depletions.

Capital Cost

Turning now to the last item in my opening remarks, the capital cost for the presently planned expansions to existing mines appears to average about \$850 per ton of annual production capacity of copper metal while in the case of new mines now in the development stage this cost appears to average about \$1,400. Future projects as yet unplanned may well cost more per ton of annual capacity. If we assume a requirement of 5 million tons of primary copper by the year 1970, and after allowing for the mines which will decrease output or go out of production between now and then, we figure that the capital investment between now and 1970 (including projects now under development) which will be required to create the requisite capacity may be as much as 3 billion dollars. While this figure may

appear large it should be kept in perspective against the estimated cost of creating for instance additional aluminum and oil capacity during the same period to achieve the production which those industries reckon they, too, will require by 1970. The figures are, I believe, several times greater for aluminum and about forty times greater for oil.

Conclusion

In conclusion, it seems to me that the future of the copper industry in the next two decades will be governed to a large extent by the decisions of the industry on production policies and marketing policies; by the willingness to put research and development as a high priority; and by the skill of the geologists and prospectors in the discovery of not too costly sources of copper.

One thing is quite certain and that is that much of what I have projected today will in the event be proved false. However, in a survey covering such a subject so widely there fortunately exists room for errors partially to cancel themselves out, so that the broader the picture one takes the safer ground one may be on. I have tried to take the broadest possible picture and thus lay myself less open to criticism in the course of time when some of these individual points I have mentioned will be seen inevitably to be proved wrong in some degree.

I should like to thank the Mining Club for the invitation to address you today and to add that the opinions I have been outlining are my own and do not necessarily represent the opinions of my colleagues in Africa, England or New York. I should like to conclude by repeating what I said at the beginning, namely that nothing I have said today is intended to be crystal-gazing. My intention is implied in the title of this address, namely, to present some factors affecting the future of the copper industry. I have been dealing in factors and not necessarily in facts.

Copper Raw Materials Use in December 26% Over '57

Washington — Consumption of copper-base raw materials during December 1958 increased 8 per cent over November and 26 per cent compared to a year ago, according to detailed figures announced by the U. S. Department of Commerce.

During December 1958, 127,000 tons of refined copper were consumed, an increase of 5 per cent over November and 23 per cent over December 1957. Brass mills and copper wire mills both contributed to this increase. Brass mill consumption of 50,000 tons in December represented an increase of 9 per cent from November and 19 per cent from December 1957. Wire mill consumption increased only 1 per cent from November's 73,000 tons. However, December 1958 exceeded the corresponding month of 1957 by 28 per cent.

Performance Tops Paley Predictions

By **WALTER L. RICE**, President, Reynolds Mining Corporation

IT IS A pleasure for me to report to you that the light metals industries are running well ahead of the growth schedule projected by the President's Materials Policy Commission.

I, of course, am in the enviable position of second-guessing the commission. And I feel very much like an armchair coach after his team has triumphed by a margin far exceeding the predictions of the official prognosticators.

In preparing this commentary on the five-year growth of our industries, I have learned some gratifying facts. For instance, by 1956 light metals consumption had increased more than 20 per cent beyond the commission's expectations—a growth not anticipated by the study until the year 1960.

To get a better view of the road ahead we can summarize some of the factors underlying this unexpected acceleration of our industrial growth.

The Paley committee actually made no near-term projections. Their predictions were for the year 1975—still some 20 years hence. So, I have had to calculate an average annual implied rate of growth, for use in making actual comparisons for the five-year period we are discussing.

Aluminum has been the star performer in light metals. It would seem that like Shakespeare's Cleopatra, "she makes most hungry where most she satisfies." More than any of the light metals, aluminum has far outdistanced the Paley predictions. Since it also happens to be the metal I know best, it will be the primary subject of my comments. But first, let me review briefly the almost equally dramatic growth of the other light metals.

Magnesium

Magnesium, until now, has been important mainly for chemical and metallurgical uses, and as an alloying element with aluminum. But the age of the Sputniks and Explorers has assigned a new importance to this metal. Its light weight (35 per cent lighter than aluminum) is winning it a key role in the production of high-speed planes, missiles, rockets and

other tools man is fashioning in his bid for mastery of outer space.

Magnesium's low corrosion resistance, low tensile strength, and resistance to cold working have limited its structural applications to extrusions and cast forms in which weight savings are of critical importance.

In spite of these limitations, however, the consumption of magnesium metal increased from 26,000 tons in 1950 to 64,000 tons by 1956. This represents an annual rate of growth of 14 per cent in comparison to the Paley Report expectations of from 6 to 16 per cent.

Structural applications are not the only, or even the most important, uses for magnesium metal. Almost a third of the total magnesium consumed in 1956 was in the form of a raw material needed in producing two other light metals—titanium and zirconium.

As the study pointed out in 1950, the future growth of magnesium is tied to the development of new technology needed to widen the range of its uses. Certainly there is no raw materials problem in the case of this metal. Magnesium is recovered economically from sea water and its reserves are almost limitless.

Titanium

Titanium usage has not developed steadily, but in dramatic spurts. Titanium sponge production has soared 80 per cent annually, from 500 tons in 1951 to 12,000 tons in 1956. Recent difficulties have stunted estimated 1958 consumption to about 3,000 tons. Even so, this figures out to an estimated annual growth rate of around 30 per cent, comparing favorably with the Paley expectations of 30 to 40 per cent annually.

The further expansion of titanium usage is retarded primarily by costly recovery and fabrication processes. Up to now, the metal has found its widest usage in intermediate-speed aircraft. It has the strength and toughness of steel coupled with superior corrosion resistance and light weight—only 60 per cent the weight of steel. In the temperature ranges between 400 and 800 degrees experienced with intermediate speed aircraft, titanium offers significantly more strength per

given weight of material than any other available metal.

But titanium's advantages for aircraft applications are diminishing as flying speeds and operating temperatures increase beyond the metal's efficient working range. For this reason, the lower cost of stainless steel surfaces combined with internal aluminum structural members are now diverting interest from titanium in aircraft.

I do not mean to sound pessimistic about titanium's future. I'm only trying to account for the metal's disappointing performance during the last year. Certainly, we have titanium raw materials in plenty. The metal has unique structural properties and other advantages. There is every reason to believe that once the technical production and fabricating problems have been licked, and a more competitive price structure is achieved, the optimistic expectations of the Presidential committee will be fully realized. Progress is being made.

An electrolytic scrap recovery process yielding ductile titanium is under development by Mallory-Sharon. The Bureau of Mines has a fused-salt electro refining process in the pilot plant stage. With the successful completion of these and other developments, you can be sure that titanium will play an increasingly important part in the light metals age.

Zirconium

Zirconium is not light in weight. Its density is comparable to that of steel. But it is ordinarily considered a member of the family of light metals because it is manufactured by the Kroll magnesium reduction process also used for making titanium.

The Paley committee anticipated a mounting need for zirconium in nuclear and high temperature applications, but made no quantitative forecast beyond the expectations that zirconium would be a small tonnage metal. In 1950 zirconium usage totaled 25 tons. As recently as 1956 this had grown to 250 tons.

But present and planned capacity will boost production to some 3,000 tons to meet the growing needs of atomic submarine production and nu-

Address delivered before annual meeting of American Institute of Mining Engineers in San Francisco on Feb. 17, 1959.

clear power developments. So zirconium too looms large in our industrial future.

Aluminum: 10% Annual Growth Instead of 7%

In 1950 annual aluminum consumption was about one million tons. At that time the Paley Committee foresaw an average annual increase of about 7 per cent. Before the recent business recession, aluminum consumption actually had risen some 10 per cent annually to a peak usage of about two millions tons in 1956. In short, consumption doubled between 1950 and 1956.

Essentially, changes in the pattern of consumption have been along the lines anticipated by the committee. For example, the committee rightfully predicted the most important areas of growth would be in the building and construction, transportation, and electrical industries. In the building and construction field, aluminum usage increased from 21 per cent of the total demand in 1950 to 23 per cent in 1956. In transportation, usage moved up from 17 per cent of total demand in 1950 to 19 per cent in 1956. And in power transmission and electrical applications, aluminum usage jumped from 6 per cent of total demand in 1950 to 13 per cent in 1956.

Two highly important factors have both risen out of and in turn contributed to this marvelous growth of aluminum consumption: increased competition and adequate supply.

Increased Competition

In 1950, 50 per cent of the installed capacity of the United States aluminum industry was owned by one company, Alcoa. And total U. S. capacity was controlled by only three companies—Alcoa, Reynolds and Kaiser. Today, by contrast, there are six primary aluminum producers, no one of which controls much more than a third of the total capacity. Such breadth of ownership certainly makes for a healthy competitive climate in this basic U. S. industry. And this free competition has been and will continue to be the prime factor in developing new markets for aluminum.

Aluminum Abundance

In 1950, the year of the Paley report, primary aluminum consumption (as distinguished from the total, which includes scrap) of 719,000 tons almost perfectly balanced the available capacity of about 720,000 tons. This was, on the one hand, a desirable situation. On the other hand it proved a very real drawback to the expansion of aluminum usage. For the lack of an assured reasonable excess of capacity over demand retarded otherwise desirable conversions to aluminum in

many fields—in the automotive industry for example. There was the danger in the minds of those concerned with insuring adequate supplies in these fields, that a shortage might induce price rises which could wipe out the economic advantages aluminum offers at established price levels.

Since then the aluminum industry has courageously installed capacity sufficient to insure that, under normal demand situations, there will be no shortage of the metal.

Peak United States aluminum consumption, in 1956, was around 2.1 million tons. After allowance for scrap, this figure adjusts to 1.6 million tons. Current installed capacity is almost 2.2 million tons, with an additional 320,000 under construction. Thus total estimated U. S. primary capacity by 1960 will be about 2.6 million tons.

In addition, Canada has an installed capacity of close to 900,000 tons. Estimates of 1960 maximum primary aluminum requirements run optimistically to around 2.5 million tons, or a total aluminum consumption, including scrap, of around 3.1 million tons. In short, there is currently installed or under construction in North America, sufficient primary capacity to dispel any fear of aluminum shortage in the years immediately ahead.

Forecasts Too Conservative

I would say that on the whole the Paley commission did an excellent job in forecasting the growth and problems of the light metals industries. The only serious criticism that can be made at the present time is that their forecasts of growth were too conservative.

For example, they forecast 1975 United States aluminum consumption at about 4,500,000 tons annually.

We at Reynolds have made a careful study of our own, forecasting the expected growth of more than 20 major United States industries. We studied the potential for aluminum in more than 80 major applications.

Our study indicates that if the United States economy doubles between now and 1975, as is generally expected, U. S. aluminum consumption can show a five-fold increase from current usages of two million tons to a 1975 annual usage approaching ten million tons.

Major Areas of Aluminum Growth

In 1955, 250,000 tons of aluminum went into the electrical industry. Our study points to a quadrupling of this annual consumption to over one million tons by 1975. This growth will result from the tremendously expanding power needs of this country, more and more mechanization in our homes and industries, and an even deeper pene-

tration by aluminum into electrical applications now served by other materials.

In the transportation field—cars, trucks, aircraft, railroad equipment, boats and ships—the amount of aluminum used annually will probably surge from the 400,000 tons of 1955 to 3 million tons in 1975. A seven-fold increase would make transportation the largest single market for aluminum. Already our highest hopes for aluminum in this market are being borne out. Recently Detroit announced the successful testing of all-aluminum automobile engines. And still more recently, two top automotive engineers told a group representing the heavier metals that aluminum's star is in the ascendancy—and that they had better "steel" themselves for the big light metals invasion.

In architecture and construction we anticipate a four-fold increase of aluminum usage from the current half-million tons to 2 million in 1975. This forecast, too, is well on the way to fulfillment. The world's largest manufacturer of prefabricated homes already is marketing a line of aluminum houses. In addition, Reynolds Metals Company, working with key builders, will introduce its aluminum "House of Ease" in scores of major cities in 1959. These homes will contain an average of 2,500 pounds of aluminum, by contrast with the national average of 40 pounds per house.

Military markets for the metal are more promising than ever, too. In the past, military uses of aluminum were confined primarily to aircraft. But with the advent of the intercontinental ballistic missile, the pentomic army, and the need for rapid global airborne movement of entire divisions, aluminum becomes a more strategic material than ever before. The airborne division alone will require far more aluminum than is now used for missiles and supersonic aircraft.

Bauxite Reserves Mushrooming

I could go on and on, listing rich, fertile areas for the growth of aluminum markets. But you may well ask, "Where in the world is all the bauxite to come from to support this continuing rapid expansion of low-cost metal?" If you are familiar with growth projections for the free world's aluminum industry, you know that a four-fold growth is expected by 1975. The present annual production of 3 million tons of metal requires about 12 million tons of bauxite. By 1975—which is only 16 years away—the free world aluminum industry may well require 50 million tons of bauxite or

aluminous ores such as clay to sustain itself.

I am happy to be able to assure you that obtaining that amount of ore will be no problem. Bauxite reserves have been growing so tremendously in recent years that there will be no shortage for generations to come.

For example, in the nearby Caribbean countries and northern areas of South America, the United States Bureau of Mines conservatively estimates the reserves at about 900 million tons.

In free Europe there are at least 500 million tons, and if low-grade bauxite is included, the reserves more than double. Huge round numbers like two billion tons have been mentioned as estimates of the reserves of Guinea in Africa and a similar amount for the reserves of Cape York in Australia.

It makes little difference whether those figures are correct or whether they are exaggerated ten-fold. They represent enough bauxite within the reach of ocean transport to piece out the free world's requirements for a long, long time.

And all of these reserves are usable in plants now in existence on both sides of the Atlantic, for the world's aluminum industry has developed great versatility in handling various types of bauxite.

Thus we have become more liberal about mineralogical composition, with special emphasis on cost and economic considerations. This has given us a wider scope in the search for new reserves.

At the same time, processes have been improved so that lower and lower grades of bauxite have become economically refinable. In fact, one producer has publicly reported that it has succeeded in developing a process for the economic utilization of high-alumina clay, which exists in abundance in our northwestern and southern states.

Diversification Trends

As I attempt to look into the crystal ball right now, I see several divergent trends ahead.

First, there will be a growing trend to utilize the bauxites found in the far corners of the free world, and also a trend to use the labor and to develop the low cost electricity adjacent to some of them to produce alumina and aluminum far from our shores.

Second, we will continue to import foreign bauxite to supply our alumina plants for years to come.

Simultaneously with those conditions, rising costs and new processes will, perhaps within a decade or two, make North America's abundance of bauxite substitutes competitive with bauxite from overseas.

It is impossible to foresee the combination of these sources that will evolve in the years ahead. But suffice to say that instead of being faced with a shortage of raw material, the aluminum industry is faced with a problem of logistics. These logistics must deal with such questions as the overall results of mining bauxite and processing it into alumina or all the way to aluminum metal on other continents and under other flags.

Africa and Australia

On the African continent, Guinea, Ghana and the Belgian Congo are outstanding examples of this kind of opportunity. The French-British-Swiss-American consortium called FRIA has announced plans to build a 529,000-ton alumina plant in French Guinea. Alcan has a separate plan to build a smaller alumina plant and an entire city around it. On the Gold Coast, the new nation of Ghana has its ambitious Volta River project.

The Belgian Congo is potentially the source of the cheapest aluminum in the world because of its tremendous water power resources. The Congo River has a potential of 25 million kilowatts of electricity, which could produce as much as 12½ million tons of aluminum per year. The electricity would cost 2½ mills at first, but eventually this would be reduced to 1½ mills, among the lowest costs in the world. However, complete development of this power is not likely to happen very fast, because the construction of such an enormous hydroelectric plant would require an investment of some \$5 billion.

Nevertheless, some development there seems probable. In the past six months bauxite has been discovered in the Congo only 40 miles from the site of a proposed reduction plant.

In Australia, with its promise of tremendous bauxite reserves, plus abundant coal resources for generation of electricity, there is the possibility of a parallel development.

Giant Ships to Slash Costs

The economics of transporting bauxite from these far-off places to the United States may seem forbidding. But I think the solution lies in the design of larger and more efficient ore ships. At present the world's largest self-unloading bauxite carrier is the 32,000-ton S.S. Richard, flagship of the Reynolds fleet. The oil industry has developed giant tankers of up to 100,000-ton capacity to slash long-distance transport costs, and I believe the aluminum industry can also do this.

A 100,000-ton bauxite ship would cost about \$2½ to \$3 million a year to operate. It could, for example, make

eight voyages a year from the Gold Coast of Africa to the United States. That would be a total payload of 800,000 tons a year, at an average cost of about \$3 to \$4 a ton—or substantially the same cost we now have for transporting material by rail from Pittsburgh to Cleveland.

Other Major Bauxite Sources

I have neglected to comment on the many other areas around the world from which bauxite could be brought to our plants in the USA. Oddly enough, the ores of India, of Malaya, of Indonesia, and of the Pacific Islands, tend to be gibbsitic, and therefore suitable to our traditional processes. The same could be said for Brazil, Columbia and Venezuela. The bauxites of Hawaii, of Central America, or even of our own Pacific Northwest might better be classed with bauxite substitutes.

In this discussion I have not paid adequate attention to bauxite substitutes or the fact that they would be our salvation in case of any long continued emergency that might cut us off from bauxite from overseas. In this we would not be unique. It may interest you to know that a substantial portion of the alumina produced in the Soviet Union is derived from a bauxite substitute, nepheline syenite.

Shining Future

Essentially the Paley Commission and the major aluminum producers are in agreement about the future of aluminum and the other light metals. The recent past has justified the optimism of the President's Materials Policy Commission on the growth of the light metals industry. But our best estimates now indicate them to have been too conservative.

The past and projected expansion patterns which I have been privileged to review for you today, leave no question in my mind that the course of the light metals is in one direction—upward, and the watchword for our industries remains "Continued Growth."

Aluminum Facility in Spain Expanded; Sheet Mill Added

Alicante, Spain — The installation of an aluminum sheet mill in Spain has recently been completed by an associate company of Aluminium Limited of Canada. The company, *Aluminio Iberico, S.A.*, at Alicante in Southern Spain, had a cold strip mill installed in February following completion of a hot mill in November. This brings the plant's annual capacity to 18,700 tons of semi-fabricated aluminum products, including 13,000 tons of sheet products.

ADVANCE IN BRITISH COPPER PRICE IN FEBRUARY DUE TO WORK STOPPAGES, U. S. MARKET STRENGTH

Opportunity Seen in Coming Months for Buffer Stock Manager to Convert Tin Holdings to Cash; Lead Improves Slightly; SHG Zinc in Good Demand

March 6, 1959

WHEN, at the beginning of February the threatened strike in Chile was averted, the market took on an easier appearance for a few days but there seems to be a surprising amount of underlying strength in the copper market nowadays. The fact that despite a temporary setback in the U. K., American primary producers pushed their price to the custom smelter figure of 30 cents indicated confidence on their part and, of course, later in the month this was more than justified.

While there is really nothing much wrong with the level of copper consumption in Europe at the present time, it is the strength of the American domestic position that has dominated the market, especially after the restrictions on exports of copper from the U. S. A. were reimposed on February 12. This had an immediate impact on the London market since it meant that with end-use certificates again required, American copper could no longer be relied on to fulfill LME contracts.

The January statistics showed that while producers' stocks elsewhere had risen, those in the U.S.A. had fallen to a low level in relation to the current rate of deliveries. This, with indications that domestic consumers were likely to continue buying on a substantial scale for fear of a possible major strike in the Summer, had quite an appreciable effect on sentiment here.

Although in recent weeks, stocks in London Metal Exchange official warehouses have been rising somewhat (having grown from 5,271 tons about the turn of the year to 7,217 tons at the end of February), they can still only be regarded as rather tenuous and certainly insufficient to stop prices being sensitive to outside influences. Some Russian demand for wirebars and cathodes continues to be reported from time to time but it has not been on any outstanding scale.

It was interesting to note that the N.C.R. (Ndola Copper Refineries, Northern Rhodesia) brand has been registered with the London Metal Ex-

By L. H. TARRING
London, England

change and copper from this source will now become a not unimportant factor as far as Rhodesian supplies are concerned.

Paris Meeting

There was naturally a good deal of interest shown in the first half of the month in the meeting of the International Wrought Non-Ferrous Metals Council in Paris to consider alternative methods of pricing copper. The fabricators from 13 countries who were present announced that they had decided to make available to copper producers additional statistical data, in the hope that this would improve the flexibility in copper production and by this means help to bring about a greater degree of price stability.

The information to be provided would include the trend of orders booked, monthly consumption figures and a general review of trade.

It now remains to be seen whether this gesture on the part of the fabricators will prove acceptable to producers as an alternative to a managed price. If followed up with enthusiasm, the idea could certainly have some beneficial effects as undoubtedly one of the troubles from which the copper market has been suffering in recent years has been the slowness with which output has been adjusted to variations in consumer demand. Obviously when all the copper that can be produced is readily bought there is not much room for adjustment but the problem in the last couple of years has been of a different kind and the world's major producers were undoubtedly too slow in cutting back output.

By the end of February the market was rendered firm (with prices approaching the £250 a ton mark) as a result of a stoppage of production at El Teniente in Chile; at the Hayden refinery of Kennecott in America; a strike at Cerro de Pasco (now over) and the unsettled native labor question in Central Africa. The latter al-

though not at present affecting either the Northern Rhodesian Copperbelt or the Belgian Congo mines, is nevertheless casting a shadow over the continuity of supplies from those important sources.

The readiness with which the U. S. custom smelters followed the London market up (to 32 cents) was clear evidence of their well-sold position and with dealers asking appreciably higher prices it is felt that the primary producers' quotation should be raised.

ITC Tin Meeting

The feature with regard to tin during the past month was, of course, the meeting of the International Tin Council in London from February 18 to 20. Prior to the meeting some uncertainty prevailed as to whether export quotas were likely to be raised or not, but on the whole, consumer demand continued at a high level and with both the New York and Eastern markets at a much higher level than London, prices actually gained some ground despite the disposal of appreciable quantities of tin which had been bought by the Special Fund.

When the I.T.C. announced after its meeting that quotas for the second quarter would be increased by 3,000 tons to 23,000 tons there was a temporary downward reaction but in a matter of days it was officially announced that all the tin bought with the Special Fund had been liquidated and with consumer demand still at a good level, prices crossed the critical £780 a ton mark. By the beginning of March consumer demand had quieted down again and cash tin was hovering around £780 a ton and will perhaps stay about that level for a little while.

However, as the statistical forecasters still show a deficiency in new supplies compared with estimated consumption, there should be a good opportunity in the coming months for the Buffer Stock Manager to convert some of his holdings into cash and this is likely to have a somewhat depressing effect on the London market since nobody knows how much he wishes to sell, nor at what price level he will operate. Nevertheless, with prices and quotas both somewhat

AVERAGE BRITISH PRICES FOR COPPER, TIN, LEAD, ZINC

(Per Long Ton)

Mean of Bid and Asked Cash Quotation at Close of Morning Session on London Metal Exchange

	COPPER			TIN			LEAD			ZINC		
	Cash	3 Months	Settlement	Cash	3 Months	Settlement	Current Month	3rd Following	Current Month	3rd Following	Current Month	3rd Following
1954 Averages	£ s. d. 248 17 11	£ s. d. 239 17 7	£ s. d. 249 0 11	£ s. d. 719 8 11	£ s. d. 709 17 7	£ s. d. 720 6 7	£ s. d. 98 8 12	£ s. d. 94 7 4	£ s. d. 78 5 4	£ s. d. 77 16 11	£ s. d. 90 13 4	£ s. d. 89 12 3
1955 Averages	351 14 11	341 0 3	352 5 6	740 2 12	736 12 11	740 12 8	105 17 3	105 9 6	97 14 3	95 3 7	97 14 3	95 3 7
1956 Averages	328 14 5	324 13 1	329 1 8	787 14 9	774 7 7	788 13 3	116 6 5	114 8 9	97 14 3	95 3 7	97 14 3	95 3 7
1957 Averages	219 8 10	221 0 3	219 12 10	754 15 4	747 10 10	755 8 11	96 12 9	96 13 2	81 11 7	80 1 1	81 11 7	80 1 1
1958												
January	171 7 5	174 0 5	171 10 11	730 15 5	725 0 3	731 0 5	72 3 4	72 10 11	62 11 4	62 3 7	62 11 4	62 3 7
February	162 17 9	164 2 11	163 0 9	731 11 0	732 2 9	731 17 6	74 3 7	74 0 6	63 17 2	63 10 11	63 17 2	63 10 11
March	170 2 9	171 4 5	170 5 11	731 5 9	735 13 1	731 12 5	74 15 9	74 11 3	63 9 9	63 11 2	63 9 9	63 11 2
April	175 12 0	176 18 6	175 15 0	731 0 3	729 18 6	731 7 6	72 17 5	73 0 4	62 7 6	62 11 7	62 7 6	62 11 7
May	178 15 11	180 15 1	178 19 1	730 15 11	733 19 6	731 1 5	72 2 9	72 9 6	61 17 1	62 5 3	61 17 1	62 5 3
June	194 12 3	196 3 8	194 15 6	730 5 6	732 16 8	730 10 6	73 5 6	74 3 1	64 3 6	64 13 0	64 3 6	64 13 0
July	199 16 4	200 11 8	199 19 9	731 4 4	733 4 2	731 9 7	71 9 8	72 19 2	63 11 11	64 5 6	63 11 11	64 5 6
August	205 16 3	206 1 2	205 19 6	730 9 0	731 11 0	730 15 0	70 7 8	71 17 1	63 16 8	64 11 4	63 16 8	64 11 4
September	209 6 3	209 5 6	205 9 1	718 2 11	713 17 1	718 19 3	70 10 5	71 17 1	65 0 8	65 7 9	65 0 8	65 7 9
October	236 5 9	229 15 5	236 13 1	740 16 9	735 11 6	741 8 3	74 1 0	74 11 6	69 9 4	69 9 10	69 9 4	69 9 10
November	242 19 6	236 11 9	243 4 3	757 12 6	759 3 9	758 0 6	75 11 8	75 16 9	75 5 6	72 16 1	75 5 6	72 16 1
December	320 19 11	220 14 8	221 2 10	756 9 1	758 1 2	756 16 2	72 4 1	72 6 7	74 6 10	71 5 1	74 6 10	71 5 1
1958 Averages	197 13 3	197 9 3	197 16 11	734 18 6	734 17 11	735 6 1	72 15 8	73 6 10	65 17 12	65 10 13	65 17 12	65 10 13
1959												
January	230 2 0	227 5 10	230 5 0	758 15 6	759 4 9	759 2 10	71 17 0	72 3 3	74 17 8	72 18 8	74 17 8	72 18 8
February	236 4 2	235 10 8	236 7 6	772 9 9	773 9 0	772 15 0	69 19 4	70 16 6	73 13 8	71 19 8	73 13 8	71 19 8

higher and 5,000 tons of Bolivian tin, 2,250 tons from Thailand, bartered to the U. S. Government, the outlook for tin producers is rather brighter than for sometime.

Lead Slightly Improved

Although there are still comparatively few people who have much confidence in the immediate outlook for this metal, prices over the past month have, in fact, shown some slight improvement after falling away in the middle of the month. The easiness was mainly due to the setback in the U. S. price, which has since been partially recovered.

It is a little ironical that the price of this metal in the U.S.A. has moved several times within recent weeks, in view of the fact that it was generally believed on this side of the Atlantic that one of the main objectives of the American import quotas was to achieve a stabilized domestic market.

As far as European demand is concerned, there is nothing special to report, the volume of metal being taken up showing no marked variation in either direction. The fact that imports into the U. K. in January were well above the 1958 monthly average was duly noted.

Better Showing by Zinc

The zinc market here continues to make a better showing than most observers had expected, especially in view of the not particularly encouraging January statistics in the U.S.A. It is true, of course, that Special High Grade is in very brisk demand from the die casting industry, mainly thanks to the high level of production of motor cars.

The brass trade, however, while doing fairly well overall, has some rather soft spots and galvanizing still leaves quite a bit of room for improvement. Nevertheless, whatever the world supply situation may be, g.o.b. metal is by no means plentiful in this country and the backwardation in Metal Exchange prices persists.

U. K. COPPER STATISTICS

The British Bureau of Non-Ferrous Metal Statistics reports U. K. stocks of copper at the end of December as 14,281 tons of blister and 49,903 tons refined, compared with November's figures of 20,231 tons and 48,792 tons respectively. The end-December figures include 24,377 tons of refined held by consumers, 5,545 tons in L.M.E. warehouses and 19,981 tons elsewhere. U. K. output in December was 8,073 tons primary refined, compared with 10,022 tons in November and 9,238 tons secondary refined compared with 8,504 tons. Full consumption details are given below:

Product	12 mos. ending Dec. 1958	31st Dec. 1957	1958
Unalloyed Copper			
Wire (1)	26,089	266,673	296,455
Rods, bars & sections	1,688	17,720	21,153
Sheet, strip and plate	4,317	87,287	65,850
Tubes	4,836	57,846	61,719
Castings & miscellaneous	650	7,800	7,800
Alloyed Copper Products			
Wire	1,276	16,578	15,970
Rods, bars and sections	10,167	121,751	118,633
Sheet, strip and plate	7,170	89,301	88,471
Tubes	1,588	22,219	22,869
Castings & miscellaneous	6,698	77,148	73,926
Copper sulphate	3,855	43,905	28,049
Total all products	67,744	778,219	790,895

Copper content of output	56,698	641,484	667,979
Consumption of refined copper (2)	45,968	507,493	534,619
Consumption of copper and alloy scrap (3) (copper content)	10,730	133,991	133,359

Notes: (1) Consumption of H. C. Copper and cadmium copper wire rods for wire and production of wire rods for export.
(2) Virgin and secondary refined copper.
(3) Consumption of copper in scrap is obtained by the difference between copper content of output and consumption of refined copper, and should be considered over a period since monthly figures of scrap consumption are affected by variations in the amount of work in progress.

U. K. LEAD STATISTICS

According to the British Bureau of Non-Ferrous Metal Statistics lead stocks in the U. K. at the end of December rose from 35,335 tons (27,150 tons imported and 8,185 tons English refined) at the end of November to 45,577 tons (36,620 tons and 8,957 tons). Production during December totaled 7,792 tons, a very slight increase over the November figures of 7,739 tons. Full consumption details are given below.

Product	12 mos. ending Dec. 1958	31st Dec. 1957	1958
Cables	8,148	114,342	100,071
Batteries-as metal	2,505	28,677	29,466
Battery oxides	790	25,112	25,076
Tetraethyl lead	1,953	21,342	20,131
Other oxides and compounds	2,012	24,604	25,643
White lead	614	9,622	8,892
Shot	362	4,291	4,540
Sheet and pipe	8,065	67,696	66,247
Foil and collapsible tubes	297	4,506	4,111
Other rolled & extruded	486	6,399	5,818
Solder	1,125	12,819	13,315
Alloys	1,699	17,262	18,902
Miscellaneous uses	1,108	12,684	12,708
Total consumption	27,154	349,156	335,920
Monthly average	22,906	27,993	27,993
of which:			
Imported virgin lead	13,462	168,754	166,651
English refined	5,979	80,045	76,001
Scrap including re-melted	7,714	100,356	93,268

U. K. TIN STATISTICS

The British Bureau of Non-Ferrous Metal Statistics reports that U. K. consumption of tin during December was at the rate of 1,802 tons against 1,795 tons the previous month. Production during the month rose to 2,396 tons (46 tons of which were secondary) from the November figure of 2,224 tons (37 tons), while stocks in the U. K. at December 31st showed a slight decline at 19,054 tons from the November total of 19,285 tons. Details of consumption are given below:

	12 mos. ending Dec. 1958	31st Dec. 1957	1958
Tinplate	988	11,093	9,984
Tinning:			
Copper wire	46	539	514
Steel wire	10	99	97
Other	62	726	743
Total	118	1,364	1,354
Solder	146	1,910	1,907
Alloys:			
Whitemetal	239	2,779	2,857
Bronze & gunmetal	145	2,396	2,219
Other	33	390	415
Total	417	5,565	5,491
Wrought tin (1)			
Foil and sheets	21	263	241
Collapsible tubes	23	352	289
Pipes, wire & capsules	3	56	38
Total	47	671	568
Chemicals (2)	76	1,082	992
Other uses (3)	10	102	117
Total all trades	1,802	21,787	20,413

Notes: (1) Includes Compo & "B" Metal;
(2) Mainly Tin Oxide; (3) Mainly Powder.

U. K. ZINC STATISTICS

During December, U. K. stocks of zinc rose from 35,396 tons at the end of November to 37,994 tons at the end of December, according to the British Bureau of Non-Ferrous Metal Statistics. Of the end December total consumers held 15,664 tons. U. K. production was 6,829 tons compared with the November figure of 26,042 tons. Full consumption details are given below:

	12 mos. ending Dec. 1958	31st Dec. 1957	1958
Brass	7,925	96,356	94,589
Galvanizing	7,952	102,456	90,386
of which: General	2,641	33,723	33,315
Sheet	2,274	33,381	32,062
Wire	1,596	20,757	20,165
Tube	1,441	14,595	14,844
Rolled zinc	1,793	22,548	25,094
Zinc oxide	2,225	27,474	26,591
Zinc Diecasting and forming alloy	4,386	44,590	48,156
Zinc dust	848	11,246	10,256
Miscellaneous uses	912	11,736	10,998
Total all trades	26,042	316,406	306,070
of which:			
Slab zinc			
High purity (99.99%)	4,597	48,720	52,097
Electrolytic & high grade (99.95%)	4,619	57,228	57,927
G.O.B. Prime Western & debased	9,421	125,072	112,208
Other virgin material	229	3,040	2,833
Remelted zinc	397	5,692	5,316
Scrap—(Zinc content)	2,596	34,077	31,289
Zinc metal, alloys & residues, brass and other copper alloys	4,183	42,577	44,400

METALS, MARCH, 1959

U.S. COPPER MARKET BOILS OVER; SMELTERS CLIMB TO 34c, PRODUCERS TO 31½c; USERS FEAR STRIKE

Lead Dips ½c, Then Returns to 11½c N. Y.; Zinc Drops ½c to 11c E. St. Louis; Tin Strengthens on Consumer Buying; Silver, Quicksilver and Platinum Move Up

March 16, 1959

THE copper market merry-go-round was spinning full tilt during the month in review. Jittery consumers, worried about possible strike-induced metal shortages, tried to stock up on already-scarce supplies and prices were propelled upward. The lead market see-sawed while zinc slid. Among the other metals, aluminum was steady and tin advanced, as did silver, quicksilver and platinum.

Since the last report in this space, primary copper producers advanced their prices from 30.00c to 31.50c on March 9, while custom smelters, after going from 30.50 to 32.00c (on March 4) withdrew from the market on March 10 as sellers; smelters returned as sellers on March 16, at 34.00c. Lead dipped from 11.50c to 11.00c a pound at New York, on February 24, and then regained the half cent on March 5 when it moved back up to 11.50c. Zinc tumbled from 11.50c to 11.00c a pound for the Prime Western grade at East St. Louis, on February 25.

Smelters at 34.00c

Custom smelters, after being out of the market as sellers of electrolytic copper from March 10 through March 13, returned to the market as sellers on March 16, at 34.00c a pound delivered. Consumers' panicky buying due to fear of a strike on June 30, the high price for scrap, the uptrend on the London Metal Exchange and on the domestic Commodity Exchange, plus the limited supply of copper, were the principal factors that caused the 2.00c increase.

At 34.00c a pound, the custom smelters were allocating the limited tonnages they had among their regular customers. As a matter of fact, not all the brass mills that were offered smelter copper at 34.00c on March 16 were willing to buy it. Some, however, did and so did some wire mills. Custom smelters actually were relieved when some of their offers went untaken, because had the demand been very active they would have been in the same position as when they were out of the market and not quoting—sold out.

At 34.00c a pound the smelter electro copper quotation is the highest that it has been since February, 1957.

Custom smelters, in an effort to coax out more scrap, increased their scrap copper buying prices twice on March 16, each time by 0.50c a pound, to a basis of 28.50c for No. 2 heavy copper and wire scrap. Where large tonnages of scrap were involved, the price was open to negotiations.

Producers at 31.50c

The primary producers on March 9 hiked their prices 1.50c a pound to 31.50c. Their order books have been crammed and even their regular customers have been unable to get as much copper as they want to buy.

Strikes in the copper industry, plus the demand, were the immediate factors in bringing the copper market to a boil. Kennecott's big copper mine in Chile, El Teniente, was idled by a strike (since settled). Kennecott's Ray Mine in Arizona has been shut down by a strike since March 2; the mine's normal output is about 4,500 tons of copper a month. Anaconda has had labor trouble which tied up its mine operations in Montana, and American Smelting and Refining Co.'s big refinery at Tacoma, Wash., also has been having labor pains, including a slowdown in operations due to the fact that the management had discharged some workers.

Political unrest in Central Africa has been becoming progressively worse, although it has not yet affected copper production in Northern Rhodesia or in the Belgian Congo.

February Copper Statistics

While the production statistics for February seemed to give assurance that barring any serious work stoppages there should be an ample supply of copper in months to come, consumers at this writing were bent on getting a large supply of physical metal into their plants right now. With that as their objective, some of them went to dealers and paid as much as 34.25c f.o.b. refinery for April copper.

Domestic refined copper statistics for February follow in tons, with the January totals in parentheses: pro-

duction, 142,235 (137,361); deliveries to domestic fabricators, 120,134 (114,425); stocks in producers' hands end of month, 85,523 (80,780).

Tariff on Copper

The present copper duty of 1.70c a pound will have to continue in effect until after GATT has met to consider tariff reductions. The 1.70c import duty went into effect on July 1, 1958, in accordance with the Reciprocal Trade Agreement Act of 1955. In August, 1958, Congress passed and the President signed a four-year extension of the Reciprocal Trade program.

The law permits the President to negotiate tariff cuts any time during the four-year period ended June, 1962. In general, these reductions would be by 5 per cent or a total of 20 per cent for the four years, with no reduction to exceed 10 per cent in any one year. The tariff changes could be put into effect any time through June, 1966.

As far as copper is concerned, before there can be any further cut in the duty, there first would have to be a meeting of GATT for the specific purpose of considering tariff reductions. The meeting of GATT to consider tariffs is expected to take place in 1961 to give the organization an opportunity to evaluate the effect of the Common Market among six European nations.

In the interim, if the domestic average price of copper in any month should drop below 24.00c a pound the import duty would be raised to 2.00c a pound.

Mill, Ingot Prices Raised

Following the rise in the primary producer copper price on March 9, wire and brass mills raised prices for their products to reflect a copper quotation of 31.50c. Brass and bronze ingot prices on March 9 were increased 0.50 to 1.50c a pound, depending on grade. Brass mill scrap buying prices also were hiked to reflect copper at 31.50c.

Lead Advances to 11.50c

Lead prices moved down and then up during the month in review. The price was dropped 0.50c on February 24 to 11.00c a pound New York, and

on March 5 was raised by 0.50c back to 11.50c.

The drop on February 24 was not unexpected, since the quotation was deemed vulnerable not only because of the light consuming demand but also because of the low price that prevailed on the London Metal Exchange.

The rise on March 5 also was no surprise, as consumers had been placing orders for large tonnages for March shipment at the spot 11.00c New York quotation, apparently convinced that the market price had touched bottom. In the week ended March 5, lead sales totaled about 21,000 tons, the largest turnover for any one week in a long time.

In anticipation of an increase in the lead quotation, scrap offerings dried up. In an effort to coax out more scrap the battery plate smelting charge was reduced \$5 in the East to \$60-\$65 a ton on March 9.

Sales at this writing at 11.50c have been moderate, but because of the recent heavy buying, was occasioning little concern.

Zinc at 11.00c

The 0.50c reduction in the zinc price on February 25 to 11.00c East St. Louis for the Prime Western grade came as a distinct surprise to many factors in the industry. While the demand for Special High Grade had been disappointing, the base grade, Prime Western had been quite active and some producers were able to dispose of their output.

The feeling in some industry circles was that a price cut would not cure the present status of the market in that it will not result in any marked increase in consumption. What the market needs, these same factors asserted, was greater equilibrium between supply and demand. Overproduction is believed the crux of the situation.

Mainstay of the market at this writing is that Prime Western is being bought in good volume by the galvanizing trade for shipment over the next two months.

Domestic statistics for zinc (all grades) for February follow in tons, with the January totals in parentheses: production 71,174 (76,481); shipments to domestic consumers, 65,641 (70,770); stocks in producers hands at the end of month, 200,461 (195,777).

The International Tin Council, at its London mid-February meeting, established the tin export quota for the April-June quarter of this year at 23,000 tons as compared with 20,000-ton quota in effect for the first quarter of 1958. The boost in the permissive export quota by 3,000 tons

brought the quota to the same level that prevailed during the second and third quarters of last year. Late in February the ITC announced that tin acquired via the special fund had been entirely sold. Some 5,000 tons of tin had been acquired by the special fund.

Prices on the New York market, with consumers displaying a good deal of interest continued to show considerable strength although easing off somewhat at the close of the period in review. Spot Straits tin was quoted at 103.37½ a pound at New York on March 12, compared with the 102.62½ for February 16 last quoted in this space. For the February 16-March 12 period the high was the 104.87½c registered on February 26 while the low of 101.87½ occurred on March 9.

Aluminum Steady

Primary aluminum prices held steady on the basis of 26.80c a pound for the 30-pound primary ingot, 99.5 per cent plus grade, f. o. b.

Of interest was the announcement on March 9 by the Aluminum Co. of America that it was increasing its primary aluminum output and accelerating operations at its bauxite mining facilities in Arkansas and moving to step up production at its bauxite refining plants in Arkansas and Texas. Improving business conditions, now being reflected in the order books at fabricating plants of Alcoa and its customers, were said to have prompted the company's action.

Silver Advances

The New York silver price advanced four times during the month in review, on February 24 and 27 and on March 2 and 4. The first two advances were of 0.25c an ounce each, the third a rise of 0.125c, and the fourth another hike of 0.25c to 91.37c an ounce on March 4.

Quicksilver Firmer

Quicksilver at the close of the month in review displayed more firmness, with spot metal quoted at \$222 to \$226 per flask of 76 pounds, as against the last quoted range in this space of \$218 to \$221 per flask, which was established on December 29.

Platinum Prices

Refiners' platinum prices, during the month in review, jumped \$20 an ounce. Refiners had increased their prices \$5 an ounce to \$57 an ounce in wholesale quantities and to \$60 an ounce in retail lots. On February 19 the refiner range was hiked \$10 an ounce, to \$67-\$70, and boosted another \$10 an ounce on March 6 to \$77-\$80. The increase reflected reduced offerings of the metal by Russia and higher prices at dealer levels, both here and abroad.

Washington Report

(Continued from Page 4)

as domestic production is restricted.

On the other side, foreign governments, particularly Canada are putting pressure on Washington to get the contracts extended.

AEC announced that domestic uranium ore reserves were estimated to total 82,500,000 tons on January 1, 1959. Ore receipts at all private plants and Government purchase depots in July-December, 1958, totaled 2,807,000 dry short tons, ore fed to process totaled 3,011,000 tons with an average grade of 0.255 per cent U3O8; ore stockpiles as of December 31, 1958, totaled 1,747,636 dry tons; and a total of \$1,177,883 was paid in initial production bonus in the last six months of 1958.

As of January 1, there were 23 uranium processing mills in operation, including the single Government-owned mill at Monticello, Utah. Their combined rate daily capacity was 21,065 tons of ore per day, and their total estimated capital investment was \$134,928,000.

Curtall Barter List

The Agriculture Department has removed eight strategic minerals from its list of foreign-produced materials eligible for barter for U.S. farm surpluses.

The materials dropped are cadmium, metallurgical grade chromite, ferrochrome, acid grade fluorspar, commercial battery grade manganese natural Grade A battery grade quartz crystals and ruthenium.

The department previously had removed industrial diamonds from the list of eligible barter materials. Barter officials said all nine types of minerals will no longer be considered eligible for barter because their quotas have already been filled.

Under the barter program, Government-owned farm surpluses are made available to private exporters for exchange for an equivalent amount of foreign strategic minerals. These minerals are deposited in the Government's "supplemental stockpile," a special repository for goods acquired under farm price support programs.

The Agriculture Department reported that barter contracts with an export value of \$26,800,000 were negotiated by the Commodity Credit Corp. in the October-December, 1958, quarter.

This compares with contracts valued at \$5,200,000 in the October-December, 1957, quarter, and \$65,100,000 for the full fiscal year 1958, ended last June 30.

Daily Metal Quotations for February, 1959

The following quotations are taken from the Daily Metal Reporter*
(In Cents Per Pound)

FEBRUARY	Copper			Tin		Lead		Zinc		Alumi- num		Anti- mony		Silver					
	Producers' Price	Del. Conn.	Custom Smelters' or Outside Price	Electro 10 b. Refinery	Lake Del.	Aver. Prompt Electrolytic Export Price F.a.s. N. Y.	Spot	Prompt	New York	Outside St. Louis	Prime West. E. St. Louis	Prime West. Del. N. Y.	Brass Spec. E. St. Louis	High Grade Delivered	Spec. High Grade Delivered	30-Lb. Ingot 99 1/2% Plus (10 b.)	Domestic Spot 99.5% (10 b.)	Foreign Spot 99.5% (10 b.)	(Cents Per Ounce) New York
2	29.50	30.00	30.00	29.10	30.00	30.00	101.00	100.875	12.00	11.80	11.50	12.00	11.75	12.50	12.75	26.80	29.00	29.00	90.375
3	30.00	30.00	30.00	29.60	30.00	30.00	101.375	101.25	12.00	11.80	11.50	12.00	11.75	12.50	12.75	26.80	29.00	29.00	90.375
4	30.00	30.00	30.00	29.60	30.00	30.00	101.75	101.625	12.00	11.80	11.50	12.00	11.75	12.50	12.75	26.80	29.00	29.00	90.375
5	30.00	30.00	30.00	29.60	30.00	30.00	102.125	102.00	12.00	11.80	11.50	12.00	11.75	12.50	12.75	26.80	29.00	29.00	90.375
6	30.00	30.00	30.00	29.60	30.00	30.00	102.00	101.875	12.00	11.80	11.50	12.00	11.75	12.50	12.75	26.80	29.00	29.00	90.375
9	30.00	30.00	30.00	29.60	30.00	30.00	102.375	102.25	12.00	11.80	11.50	12.00	11.75	12.50	12.75	26.80	29.00	29.00	90.375
10	30.00	30.00	30.00	29.60	30.00	30.00	102.125	102.00	12.00	11.80	11.50	12.00	11.75	12.50	12.75	26.80	29.00	29.00	90.375
11	30.00	30.00	30.00	29.60	30.00	30.00	102.125	102.00	11.50	11.30	11.50	12.00	11.75	12.50	12.75	26.80	29.00	29.00	90.375
13	30.00	30.00	30.00	29.60	30.00	30.00	102.00	101.875	11.50	11.30	11.50	12.00	11.75	12.50	12.75	26.80	29.00	29.00	90.375
16	30.00	30.50	30.50	29.85	30.00	30.50	102.625	102.50	11.50	11.30	11.50	12.00	11.75	12.50	12.75	26.80	29.00	29.00	90.375
17	30.00	30.50	30.50	29.85	30.00	30.50	102.625	102.50	11.50	11.30	11.50	12.00	11.75	12.50	12.75	26.80	29.00	29.00	90.375
18	30.00	30.50	30.50	29.85	30.00	30.50	102.625	102.625	11.50	11.30	11.50	12.00	11.75	12.50	12.75	26.80	29.00	29.00	90.375
19	30.00	30.50	30.50	29.85	30.00	30.50	103.25	103.25	11.50	11.30	11.50	12.00	11.75	12.50	12.75	26.80	29.00	29.00	90.375
20	30.00	30.50	30.50	29.85	30.00	30.50	103.625	103.625	11.50	11.30	11.50	12.00	11.75	12.50	12.75	26.80	29.00	29.00	90.375
24	30.00	31.00	31.00	30.10	30.00	31.00	104.125	104.125	11.00	10.80	11.00	12.00	11.75	12.50	12.75	26.80	29.00	29.00	90.375
25	30.00	31.00	31.00	30.10	30.00	31.00	104.75	104.75	11.00	10.80	11.00	11.50	11.25	12.00	12.25	26.80	29.00	29.00	90.625
26	30.00	31.00	31.00	30.10	30.00	31.00	104.875	104.875	11.00	10.80	11.00	11.50	11.25	12.00	12.25	26.80	29.00	29.00	90.625
27	30.00	31.00	31.00	30.10	30.00	31.00	104.75	104.75	11.00	10.80	11.00	11.50	11.25	12.00	12.25	26.80	29.00	29.00	90.875
AV.	29.972	30.361	30.361	29.753	30.00	30.361	102.785	102.708	11.583	11.383	11.411	11.911	11.661	12.411	12.661	26.80	29.00	29.00	90.444
HI.	30.00	31.00	31.00	30.60	30.00	31.00	104.875	104.875	12.00	11.80	11.50	12.00	11.75	12.50	12.75	26.80	29.00	29.00	90.875
LO.	29.00	30.00	30.00	28.60	30.00	30.00	101.00	100.875	11.00	10.80	11.00	11.50	11.25	12.00	12.25	26.80	29.00	29.00	90.375

* When split quotations prevail the daily average price is listed. The highs and lows for the month take into consideration the levels reached at both sides of such ranges.

United States Duties on Principal Ore and Metal Imports

(Including Revisions in Effect June 30, 1957, Under Geneva Agreements)

(Quantities Are in Pounds Unless Otherwise Stated; n.s.p.f. Stands for "Not Specially Provided For.")

COPPER

NOTE — The excise tax of 4c a pound on copper (which was reduced to 2c a pound by the Geneva Trade Agreement) was suspended in April, 1947, until March 31, 1949, and on expiration it was further suspended until June 30, 1956. The tax was reimposed on July 1, 1956. It was suspended again on May 22, 1951, retroactive to April 1, 1951, and until February 15, 1953, and again until June 30, 1954. Suspension further extended to June 30, 1955, and again until June 30, 1956. If import tax is restored, the 1956 Geneva Agreement provides for 5% reductions effective on June 30 of 1956, 1957 and 1958, provided the price is above 24c; if the price is below 24c the 2c tax would prevail.

Copper ore and concentrates, usable as flux, etc., copper content	1.70c lb.
Copper ore and concentrates, product of Cuba, copper content	free
Copper ore and concentrates, product of Philippines, copper content	0.17c lb.
Copper ore and concentrates, copper content	1.70c lb.
Regulus, black, or coarse copper, and cement copper, copper content	1.70c lb.
Unrefined black, blister, and converter copper in pigs or converter bars, copper content	1.70c lb.
Refined copper in ingots, plates or bars, copper content	1.70c lb.
Copper rolls, rods or sheets	1 1/4c lb. (plus 1.70c lb. ††)
Copper seamless tubes and tubing	2 1/2c lb. (plus 1.70c lb. ††)
Copper plain wire	1 1/2c lb. (plus 1.70c lb. ††)
Copper brazed tubes†	4.50c lb. (plus 1.70c lb. ††)
Old and scrap copper, fit only for remanufacture: and scale and clippings, copper content	1.70c lb.

†† Copper content.

BRASS

Brass rods, sheets, plates, bars, strips, Munts or yellow metal sheets, sheathing, bolts, piston rods, shafting and bronze rods, tubes and sheets	2c lb.
Brass tubes and tubing, seamless	2c lb.
Brass tubes, brazed, angles and channels	6c lb.
Brass and bronze wire	12 1/2c lb.

LEAD

NOTE — Import duties on lead-bearing ores, flue dust, and mattes of all kinds, lead bullion or base bullion, lead in pigs and bars, lead dross, reclaimed lead and antimonial lead were suspended February 12, 1952, and reimposed on June 28, 1952. Lead scrap duty was reimposed July 1, 1952.

Lead-bearing ores and mattes, n. s. p. f., lead content	3/4c lb.
Bullion or base bullion, lead content	1 1/16c lb.
Pigs and bars, lead content	1 1/16c lb.
Reclaimed, scrap, dross, lead content	1 1/16c lb.
Babbitt metal and solder, lead content	1 1/16c lb.
Pipe, sheets, shot, glaziers' lead, and wire	5/16c lb.
Type metal and antimonial lead, lead content	1 1/16c lb.
White lead	1.05c lb.
Litharge	1 1/4c lb.
Red lead	15/16c lb.
Orange mineral	1c lb.

ZINC

NOTE — Import duties on zinc-bearing ores, and on zinc in blocks, pigs and slabs were suspended February 12, 1952, and reimposed on July 24, 1952. Tax on old zinc and dross and skimmings reimposed July 1, 1953.

Zinc-bearing ores, except pyrites containing not more than 3% zinc, zinc content	6/10c lb.
Zinc contained in zinc-bearing ores, n. e. s., not recoverable, zinc content	6/10c lb.
Zinc, old and worn out, fit only for remanufacture	3/4c lb.
Dross and skimmings	3/4c lb.
Zinc in blocks, pigs or slabs	7/10c lb.
Zinc in sheets	1c lb.
Zinc sheets, plated with nickel or other base metal, or solutions	1 1/4c lb.

Zinc dust	7/10c lb.
Zinc die-casting alloys	12 1/2%
Zinc oxide and leaded zinc oxides containing not more than 25% lead, dry	3/5c lb.
ground in or mixed with oil or water	1c lb.

MISCELLANEOUS METALS AND ORES

Aluminum, metal and alloys, crude, except alloys elsewhere provided for†	1.25c lb.
Aluminum scrap	free
Aluminum plates, sheets, bars, rods, circles, squares, etc.†	2.50c lb.
Antimony ore, antimony content	free
Antimony metal and regulus	2c lb.
Antimony needle or liquidated	1/4c lb.
Antimony oxide	1c lb.
Antimony sulphides	1/2c lb. & 12 1/2%
Arsenic, metallic†	2.50c lb.
Arsenious acid or white arsenic	free
Bauxite, crude*	free
Bauxite, refined**	1/4c lb.
Bismuth	1 1/4%
Bismuth salts and compounds	35%
Beryllium metal†	21%
Beryllium ore	free
Cadmium	3 3/4c lb.
Cadmium flue dust, cadmium content	free
Chrome ore or chromite	free
Chrome or chromium metal†	10 1/2%
Cobalt metal	free
Cobalt ore and concentrates, cobalt content	free
Magnesium, metallic†	50%
Magnesium powder, sheets, wire†	17c lb. & 8 1/2%
Magnesium alloys	20c lb. & 10%
Magnesium scrap	free
Manganese ores, containing over 10% manganese, manganese content	1/4c lb., except Cuba, free
Molybdenum ore or concentrates, molybdenum content†	30c lb.
Nickel ore, matte and oxide	free
Nickel and alloys, nickel chief value, n. s. p. f., in pigs, ingots, shot, cubes, grains, cathodes, or similar forms	1 1/4c lb.
Nickel, bars, rods, plates, sheets, castings, strips, wire or electrodes	12 1/2%
Nickel scrap	free
Nickel tubes, tubing	6 3/4%
(if cold rolled, drawn or worked — 2 1/2% extra)	
Platinum, grain, nuggets, sponge and scrap, oz. troy	free
Platinum in ingots, bars, sheets, or plates, not less than 1/8 in. thick, oz. troy	free
Platinum, ores, platinum content, oz. troy	free
Quicksilver or mercury	25c lb.
Selenium and salts	free
Tantalum	12 1/2%
Tin ore, cassiterite, and black oxide of tin, tin content	free
Tin in bars, blocks, pigs, grain, granulated, and scrap, and alloys, chief value tin, n. s. p. f.	free
Tungsten ore or concentrates, tungsten content	50c lb.

*Crude bauxite import duty suspended through July 15, 1960. **Under Public Law 25 alumina imported for use in aluminum production is free for entries from July 17, 1956 through July 15, 1960. †Tariff reduced 5% on June 30, 1958, under Geneva Agreement which expires on June 30, 1959.

Copper Statistics Reported by Copper Institute

Combined Totals in U. S. A. and Outside U. S. A.

	Crude Production		Refined Production	(In tons of 2,000 pounds) Deliveries to Refined Stock		Stock Increases or Decreases		
	Primary	Secondary		Customers	End of Period	Blister	Refined	Total
1957								
Total	2,897,719	123,270	3,035,588	2,853,307	458,340	-14,599	+103,920	+89,321
1958								
February	230,716	6,506	247,562	224,709	469,747	-10,340	+20,847	+10,507
March	247,942	8,972	259,157	229,941	493,326	-2,243	+23,579	+21,336
April	215,461	11,946	226,895	210,412	501,166	+512	+7,840	+8,352
May	218,387	11,190	225,771	212,993	498,516	+3,806	-2,650	+1,156
June	214,283	11,414	228,387	240,825	476,823	-2,540	-21,963	-24,233
July	216,315	9,516	229,578	220,801	475,164	-3,747	-1,659	-5,406
August	224,673	9,474	217,914	247,116	436,476	+16,233	-38,688	-22,455
September	202,719	7,960	204,006	254,667	374,180	+6,673	-60,948	-54,275
October	204,938	20,613	192,199	292,630	269,654	+33,352	+105,126	-71,774
November	227,916	17,755	230,109	261,097	236,774	+15,562	-32,880	-17,318
December	253,512	8,883	282,191	260,841	258,874	-19,796	+22,100	+2,304
Total	2,707,926	138,696	2,805,622	2,916,588	258,874	+41,000	-199,466	-158,466
1959								
January	257,682	12,377	270,995	248,574	284,545	-936	+22,001	+21,065
February	246,638	12,647	264,018	243,741	304,303	-4,733	+19,578	+15,025

In U. S. A.

1957								
Total	1,116,380	112,060	1,616,964	1,277,946	181,024	.....	+60,379	.....
1958								
January	94,735	13,855	136,748	110,557	176,287	.....	-4,737	.....
February	87,130	6,222	128,299	93,784	201,223	.....	+24,936	.....
March	90,366	8,607	130,075	78,683	238,641	.....	+37,418	.....
April	86,123	11,475	120,467	81,930	251,099	.....	+12,458	.....
May	80,628	10,488	115,978	78,631	253,463	.....	+2,364	.....
June	71,092	10,980	107,918	100,796	244,450	.....	-8,013	.....
July	64,444	8,858	110,130	77,523	242,781	.....	-2,669	.....
August	67,917	8,999	100,640	88,982	215,560	.....	-27,221	.....
September	79,541	7,259	107,971	101,971	178,222	.....	-37,338	.....
October	92,214	19,865	113,288	120,793	128,490	.....	-49,732	.....
November	96,369	16,755	128,048	131,188	93,596	.....	-34,894	.....
December	97,641	7,911	146,978	116,310	80,722	.....	-100,302	.....
Total	1,008,170	131,294	1,446,540	1,179,416	00,722	.....	-12,874	.....
1959								
January	95,542	11,284	137,361	114,425	80,780	.....	+58	.....
February	90,560	11,335	142,235	120,134	85,523	.....	+4,743	.....

Outside U. S. A.*

1957								
Total	1,783,119	11,210	1,418,624	1,575,361	277,316	.....	+43,541	.....
1958								
January	156,329	462	125,105	149,321	272,613	.....	-4,703	.....
February	143,586	284	119,263	130,925	268,524	.....	-4,089	.....
March	157,606	365	129,082	151,258	254,685	.....	-13,839	.....
April	129,338	471	106,428	128,482	250,067	.....	-4,618	.....
May	137,759	702	109,793	134,302	245,053	.....	-5,014	.....
June	143,191	584	120,469	140,029	231,373	.....	-13,680	.....
July	151,871	658	119,448	143,278	232,383	.....	+1,010	.....
August	156,756	475	117,274	160,134	220,916	.....	-11,467	.....
September	123,178	701	96,035	153,633	196,558	.....	-23,610	.....
October	112,724	748	78,911	171,827	141,164	.....	-55,394	.....
November	131,334	980	102,061	129,909	143,178	.....	+2,014	.....
December	155,871	972	135,213	144,531	178,152	.....	+34,974	.....
Total	1,699,756	7,402	1,359,082	1,737,172	178,152	.....	-99,164	.....
1959								
January	162,140	1,093	133,634	134,149	203,765	.....	+21,943	.....
February	156,078	1,312	121,783	123,607	218,780	.....	+15,015	.....

* Excluding Russia, Yugoslavia, Norway, Sweden, Japan and Australia.

Electrolytic Copper

Producers' Price, Del. Valley
Monthly Average Prices
(Cents Per Pound)

	1956	1957	1958	1959
Jan.	43.00	36.00	25.69	29.00
Feb.	44.03	33.318	25.00	29.972
Mar.	46.00	32.00	25.00	.....
Apr.	46.00	32.00	25.00	.....
May	46.00	32.00	25.00	.....
June	46.00	30.955	25.36	.....
July	41.56	29.25	26.125	.....
Aug.	40.00	28.639	26.50	.....
Sept.	40.00	27.031	26.50	.....
Oct.	39.308	27.00	27.548	.....
Nov.	36.00	27.00	29.00	.....
Dec.	36.00	27.00	29.00	.....
Aver.	41.992	30.183	26.31	.....

Electrolytic Copper

Custom Smelters' Price, Del. Valley
Monthly Average Prices
(Cents Per Pound)

	1956	1957	1958	1959
Jan.	50.22	34.87	24.577	29.429
Feb.	52.07	32.273	23.557	30.361
Mar.	53.11	30.952	23.326	.....
Apr.	48.88	31.24	23.66	.....
May	44.221	30.163	23.865	.....
June	40.00	29.60	25.52	.....
July	38.14	28.39	29.231	.....
Aug.	39.32	27.862	26.52	.....
Sept.	39.00	25.948	26.355	.....
Oct.	37.192	25.722	28.577	.....
Nov.	35.95	25.435	29.829	.....
Dec.	35.45	25.26	28.846	.....
Aver.	42.797	28.93	25.905	.....

Lake Copper

Producers' Price Delivered
Monthly Average Prices
(Cents Per Pound)

	1956	1957	1958	1959
Jan.	43.00	36.00	25.69	29.00
Feb.	43.783	33.182	25.00	30.00
Mar.	46.00	32.00	25.00	.....
Apr.	46.00	32.00	25.00	.....
May	46.00	32.00	25.00	.....
June	46.00	30.955	25.00	.....
July	41.68	29.25	25.75	.....
Aug.	40.00	28.611	26.50	.....
Sept.	40.00	27.00	26.50	.....
Oct.	39.321	27.00	27.577	.....
Nov.	36.00	27.00	29.00	.....
Dec.	36.00	27.00	29.00	.....
Aver.	41.975	30.162	26.251	.....

Fabricators' Copper Statistics

(In tons of 2,000 pounds)

	Fabricators' Stocks of Refined Cop.	Unfilled Purchases of Refined by Fab. from Producers	Fabricators' Working Stocks	Unfilled Sales by Fabricators to Customers	Actual Copper Consumed by Fabricators	Excess Fabricators' Stocks Over Orders Rkd.
1952						
Total	331,499	32,052	292,157	275,608	1,391,477	-203,614
1953						
Total	380,881	25,022	309,664	170,917	1,375,869	-74,678
1954						
Total	360,526	58,125	304,619	136,581	1,231,840	-22,549
1955						
Total	.....	.....	.....	.....	1,418,241	.....
1956						
July	465,015	109,040	334,584	220,810	81,275	+ 18,661
Aug.	457,679	115,295	338,818	221,975	117,427	+ 12,181
Sept.	445,679	114,981	338,488	204,154	115,867	+ 18,018
Oct.	440,766	112,893	336,856	198,517	119,440	+ 18,226
Nov.	435,216	110,792	335,829	178,814	119,441	+ 31,365
Dec.	437,187	117,601	336,217	183,834	99,223	+ 34,737
Total	.....	.....	.....	.....	1,416,378	.....
1957						
Jan.	435,635	107,231	335,944	178,326	119,517	+ 28,596
Feb.	422,266	110,174	334,542	178,913	114,298	+ 18,985
Mar.	429,410	104,551	338,454	164,623	108,170	+ 30,884
Apr.	429,708	98,638	335,921	164,410	117,041	+ 28,015
May	434,852	92,943	336,097	170,476	115,355	+ 20,822
June	426,905	82,919	340,743	153,042	110,527	+ 16,039
July	432,918	85,728	341,684	144,410	77,991	+ 32,552
Aug.	429,627	82,768	344,315	144,375	110,323	+ 23,826
Sept.	425,168	80,436	344,530	144,538	106,927	+ 16,536
Oct.	420,130	80,774	341,869	138,420	119,161	+ 20,615
Nov.	428,520	68,249	345,832	128,719	98,725	+ 22,218
Dec.	430,171	75,627	347,465	138,631	83,067	+ 19,702
Total	.....	.....	.....	.....	1,279,086	.....
1958						
Jan.	445,514	57,917	348,426	123,756	94,642	+ 31,249
Feb.	452,673	52,342	351,035	128,330	86,625	+ 25,650
Mar.	448,125	71,693	346,875	141,387	83,694	+ 31,556
Apr.	450,442	76,602	347,607	145,623	79,613	+ 33,814
May	441,001	78,194	346,404	138,190	88,447	+ 34,601
June	433,526	72,383	330,301	145,162	109,011	+ 30,448
July	431,796	77,362	326,263	153,529	79,353	+ 29,366
Aug.	421,931	78,194	323,667	150,436	96,717	+ 26,022
Sept.	416,887	71,025	319,281	145,390	105,474	+ 28,941
Oct.	399,113	91,019	315,929	156,692	138,017	+ 17,511
Nov.	419,914	88,580	328,238	157,799	110,487	+ 22,457
Dec.	447,123	90,401	326,438	177,869	92,573	+ 35,217
Total	.....	.....	.....	.....	1,165,364	.....
Jan.	451,627	101,182	327,761	180,078	108,532	+ 44,970

Scrap Copper Receipts by Custom Smelters and Refineries in United States*

(In Short Tons)

	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959
Jan.	15,763	6,640	4,528	6,486	9,859	11,047	14,322	17,506	16,024	14,511
Feb.	12,500	5,153	3,633	10,337	8,490	15,198	14,497	11,145	9,518	14,712
Mar.	13,538	7,912	5,243	19,991	9,738	12,198	15,921	13,934	11,783	.....
Apr.	12,304	8,553	6,214	16,583	9,004	13,162	17,233	14,288	15,279	.....
May	8,749	8,458	8,033	10,857	8,687	15,133	20,805	12,397	13,989	.....
June	20,623	8,628	4,425	10,945	13,309	14,765	14,758	11,949	13,945	.....
July	10,040	6,642	5,188	9,063	10,269	9,988	12,632	8,926	12,185	.....
Aug.	10,462	6,113	5,003	7,137	10,100	12,197	12,510	11,645	11,896	.....
Sept.	4,903	3,561	4,667	9,042	10,641	15,037	9,518	9,756	9,268	.....
Oct.	9,459	3,336	4,602	10,065	11,662	12,897	15,570	13,151	23,088	.....
Nov.	9,237	3,179	4,724	7,815	10,879	9,865	11,369	11,146	16,425	.....
Dec.	7,178	4,538	6,208	11,476	14,876	13,180	14,613	11,237	10,796	.....
Total	142,067	71,812	62,470	129,798	127,449	154,714	173,748	147,080	164,196	.....

* As compiled by Copper Institute.

Brass and Bronze Net Monthly Shipments

(NET TONS)

The following figures showing the combined shipments of ingot brass and bronze are compiled by the Ingot Brass and Bronze Industry and represent in excess of 95 per cent of the deliveries of the entire industry.

	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959
Jan.	19,456	18,874	28,416	28,315	23,423	20,661	25,201	27,736	25,681	20,468	22,046
Feb.	18,026	18,487	27,168	24,211	25,429	19,920	25,349	24,949	20,769	17,413	23,746
Mar.	14,560	22,494	31,997	23,890	28,256	23,653	29,713	28,310	21,948	18,825	.....
Apr.	10,695	22,118	30,473	22,547	25,044	24,746	27,641	25,808	23,507	18,009	.....
May	11,114	23,643	33,267	21,740	21,660	22,269	23,708	23,437	22,037	17,191	.....
June	9,996	25,093	33,817	21,274	20,818	22,348	23,141	18,342	18,888	17,962	.....
July	10,220	21,609	32,016	18,947	19,321	17,074	18,513	17,364	16,695	16,658	.....
Aug.	14,194	29,689	25,285	21,807	20,156	21,684	27,013	23,812	19,654	17,882	.....
Sept.	16,208	28,811	22,285	22,770	21,463	22,464	26,349	20,929	19,670	20,540	.....
Oct.	18,026	32,240	23,124	25,811	22,280	24,080	25,228	23,045	22,800	23,225	.....
Nov.	18,488	31,748	23,544	23,441	21,806	23,061	25,102	21,818	19,767	20,758	.....
Dec.	17,950	28,575	20,987	22,983	20,541	21,274	21,448	18,046	16,875	16,676	.....
Total	176,643	303,563	332,378	277,736	271,251	265,233	298,406	274,096	248,297	227,607	.....
Aver.	14,637	25,297	27,815	23,145	22,694	21,936	24,867	22,841	20,681	18,133	.....

Mine Production of Copper in United States

(U. S. Bureau of Mines)
(in short tons)

	Eastern	Missouri	Western	Total
1954				
Ttl.	79,681	2,130	1,018,496	1,100,307
1957				
June	7,793	129	82,398	90,320
July	6,101	154	78,502	84,757
Aug.	7,572	133	79,892	87,038
Sept.	6,083	132	79,623	85,338
Oct.	4,614	147	82,992	87,753
Nov.	7,063	70	80,848	87,981
Dec.	6,962	67	81,080	88,109
Ttl.	79,369	1,800	995,753	1,076,922
1958				
Jan.	7,615	164	82,476	90,255
Feb.	6,826	125	74,766	81,717
Mar.	7,517	123	79,594	87,234
April	7,035	161	76,911	84,107
May	6,522	152	71,717	78,391
June	5,801	155	62,296	68,252
July	4,188	132	56,672	61,222
Aug.	5,570	127	61,342	67,039
Sept.	5,312	114	77,561	82,987
Oct.	7,002	60	85,075	91,518
Nov.	6,617	60	87,379	94,056
Dec.	6,614	70	88,070	94,514
Ttl.	76,849	1,250	902,021	980,304

Average Custom Smelters' Scrap Buying Prices

(Cents per pound for carload lots del. consumers' works)

	No. 1 Copper Scrap	No. 2 Copper Scrap	Light Copper Scrap	Refinery Brass*
1957				
Dec.	20.78	19.28	17.03	18.58
Av.	24.38	22.88	20.76	22.11
1958				
Jan.	19.44	17.94	15.69	17.70
Feb.	18.955	17.455	15.205	16.932
Mar.	19.21	17.71	15.46	16.92
Apr.	19.60	18.10	15.85	17.56
May	20.02	18.52	16.27	17.894
June	21.93	20.43	18.18	19.76
July	22.52	21.02	18.77	20.26
Aug.	22.62	21.12	18.87	20.12
Sept.	22.37	20.87	18.62	19.87
Oct.	24.80	23.30	21.05	22.30
Nov.	25.597	24.097	21.847	23.097
Dec.	24.356	22.856	20.606	21.856
Aver.	21.788	20.282	18.035	18.047
1959				
Jan.	25.29	23.79	21.54	22.79
Feb.	26.42	24.92	22.67	24.11

* Of dry content for material having a dry copper content in excess of 49%.

Brass Ingot Makers' Scrap Copper Buying Prices

(Average Prices)
(Cents per pound del. refinery for 60,000 lbs. of each grade)

	No. 1 Copper Scrap	No. 2 Copper Scrap	No. 1 Composition	Heavy Yellow Brass
1957				
Dec.	20.78	19.28	18.94	12.94
Av.	24.37	22.87	21.804	15.66
1958				
Jan.	19.44	17.94	17.77	12.19
Feb.	18.955	17.455	17.06	11.341
Mar.	19.21	17.71	17.274	11.88
Apr.	19.60	18.10	17.75	12.35
May	19.923	18.423	18.038	12.769
June	21.93	20.43	19.02	13.43
July	22.52	21.02	19.24	13.53
Aug.	22.62	21.12	19.11	13.80
Sept.	22.37	20.87	18.88	12.90
Oct.	24.80	23.30	20.51	14.938
Nov.	25.597	24.097	20.182	14.125
Dec.	24.356	22.856	19.038	13.038
Aver.	21.777	20.277	18.653	13.024
1959				
Jan.	25.29	23.79	19.70	13.982
Feb.	26.42	24.92	21.08	15.08

METALS, MARCH, 1959

Lead Statistics Reported by American Bureau of Metal Statistics

Lead Refineries in U. S. A. and Outside U. S. A.

(Recoverable Lead Content in Tons of 2,000 Pounds)

Combined U. S. A. and Outside U. S. A.

	REFINED PRODUCTION			DELIVERIES			STOCKS		
	Pig	Antimonial Lead Content	Total	Pig	Antimonial Lead Content	Total	Pig	Antimonial Lead Content	Total
1958									
Apr. ..	122,690	8,192	130,882	100,352	7,668	108,020	243,586	19,840	263,426
May ..	135,618	8,918	144,536	109,209	8,540	117,749	266,326	20,218	286,544
June ..	127,982	7,484	135,466	105,121	8,493	113,614	285,482	19,209	304,691
July ..	109,964	8,233	118,197	107,801	9,252	117,053	284,650	18,190	302,840
Aug. ..	103,701	8,973	112,674	102,898	9,903	112,801	284,818	17,260	302,078
Sept. ..	116,283	8,806	125,089	121,929	7,986	129,915	279,172	18,080	297,252
Oct. ..	121,934	10,656	132,590	139,698	9,408	149,106	262,510	19,328	281,838
Nov. ..	120,951	8,971	129,922	112,495	9,381	121,876	273,033	18,918	291,951
Dec. ..	129,461	10,898	140,359	90,498	8,583	99,081	313,232	21,233	334,465
Total ..	1,485,282	106,383	1,591,665	1,307,390	102,697	1,410,087	.....	.....	.....
1959									
Jan. ..	129,604	9,775	139,359	114,038	10,014	124,052	328,729	20,974	349,693

U. S. A.

1958									
Apr. ..	37,328	3,384	40,712	40,597	3,373	43,970	156,150	13,202	169,352
May ..	42,659	4,481	47,140	45,576	4,118	49,694	182,187	13,892	196,079
June ..	40,795	3,600	44,395	45,640	4,409	50,049	193,021	13,298	206,319
July ..	36,052	2,681	38,733	47,381	5,263	52,644	200,949	11,027	211,976
Aug. ..	34,275	4,890	39,165	50,145	4,956	55,101	201,759	11,150	212,909
Sept. ..	38,508	4,525	43,033	65,301	4,516	69,817	215,389	11,991	227,380
Oct. ..	40,225	5,153	45,378	70,580	4,455	75,035	207,335	12,728	220,063
Nov. ..	36,572	3,621	40,193	44,834	4,181	49,015	217,728	12,352	230,080
Dec. ..	39,504	4,307	43,811	31,869	3,737	35,606	239,049	13,417	252,466
Total ..	473,208	46,985	520,193	589,528	49,893	639,421	.....	.....	.....
1959									
Jan. ..	40,110	3,365	43,475	48,311	4,492	52,803	244,870	12,426	257,296

Outside U. S. A.

1958									
Apr. ..	85,362	4,808	90,170	59,755	4,295	64,050	87,436	6,638	94,074
May ..	92,959	4,437	97,396	63,633	4,422	68,055	84,139	6,326	90,465
June ..	87,187	3,884	91,071	59,481	4,084	63,565	92,461	5,911	98,372
July ..	73,912	5,552	79,464	60,420	3,989	64,409	83,701	7,163	90,864
Aug. ..	69,426	4,083	73,509	52,753	4,947	57,700	83,059	6,110	89,169
Sept. ..	77,775	4,281	82,056	56,628	3,470	60,098	63,783	6,089	69,872
Oct. ..	81,709	5,503	87,212	69,118	4,953	74,071	55,175	6,600	61,775
Nov. ..	84,379	5,350	89,729	67,661	5,200	72,861	55,305	6,566	61,871
Dec. ..	89,957	6,591	96,548	58,629	4,846	63,475	74,183	7,816	81,999
Total ..	1,012,074	59,398	1,071,472	717,862	52,804	770,666	.....	.....	.....
1959									
Jan. ..	89,494	6,390	95,884	65,727	5,522	71,249	83,849	8,548	92,397

Summary of Lead Statistics for United States

Recoverable Lead Content in Tons of 2000 Pounds	Stocks (end of period)				Total	Smelter Receipts			Total
	Raw Material at Smelter	At Smelter & Transit	At Refinery and Process	Refined Pig and Antimonial		U.S.A.	Outside U.S.A.	Scrap	
1958									
April	83,496	5,359	29,141	169,352	287,348	25,668	16,738	1,952	44,358
May	76,981	5,785	27,472	196,079	306,317	28,637	10,445	1,971	41,053
June	77,858	4,420	28,254	206,319	316,851	30,230	14,022	1,315	45,567
July	81,103	4,848	30,065	211,976	327,992	23,440	19,665	1,629	44,734
August	78,261	6,461	33,863	212,909	331,494	26,427	13,145	1,282	40,854
September	74,100	5,893	32,606	227,380	339,979	24,718	14,937	1,718	41,373
October	63,630	6,401	29,833	220,063	319,927	22,405	9,205	3,713	35,323
November	64,821	4,721	30,208	230,080	329,830	26,179	15,932	3,954	46,065
December	72,638	7,038	28,955	252,466	361,097	28,409	18,921	4,165	51,495
Total .....	.....	.....	.....	.....	.....	311,375	191,415	29,312	532,102
1959									
January	73,831	6,169	31,577	257,296	368,873	28,436	19,185	3,198	50,819
1958									
April	40,499	37,328	3,384	40,712	40,597	3,373	43,970		
May	46,653	42,659	4,481	47,140	45,576	4,118	49,694		
June	43,662	40,795	3,600	44,395	45,640	4,409	50,049		
July	40,328	36,052	2,681	38,733	47,381	5,263	52,644		
August	42,766	34,275	4,890	39,165	50,145	4,956	55,101		
September	44,595	38,508	4,525	43,033	65,301	4,516	69,817		
October	45,144	40,225	5,153	45,378	70,580	4,455	75,035		
November	44,163	36,572	3,621	40,193	44,834	4,181	49,015		
December	42,834	39,504	4,307	43,811	31,869	3,737	35,606		
Total	524,941	473,208	46,985	520,193	589,528	49,893	639,421		
1959									
January	48,924	40,110	3,365	43,475	48,311	4,492	52,803		

United States Lead Statistics of Primary Refineries

(American Bureau of Metal Statistics)
(In tons of 2,000 lbs.)

	Stock At Beginning	Production Primary & Secondary	Total Supply	Stock At End	Domestic Shipments
1954	81,152	551,618	632,770	92,719	475,551
1955	28,855	547,153	639,872	31,089	531,339
1956					
Total		613,293	644,382	....	529,484
1957					
April	46,184	56,170	102,354	57,444	37,583
May	57,444	51,718	109,162	58,085	35,334
June	58,085	48,203	106,288	64,861	37,257
July	64,861	47,100	111,961	68,009	38,582
August	68,009	48,191	116,200	60,633	49,406
September	60,633	50,436	111,069	54,682	51,859
October	54,682	52,041	106,723	59,041	40,447
November	59,041	48,771	107,812	70,874	32,193
December	70,874	50,500	121,374	91,598	24,108
Total		604,353	645,534	....	463,060
1958					
January	91,598	47,665	139,263	101,206	33,422
February	101,206	47,133	148,339	119,522	23,832
March	119,522	43,441	162,963	128,754	28,885
April	128,754	40,984	169,738	143,136	22,172
May	143,136	47,487	190,623	155,121	30,021
June	155,121	44,636	199,757	163,504	32,078
July	163,504	38,827	202,331	164,860	31,948
August	164,860	39,520	204,380	169,302	34,254
September	169,302	43,269	212,571	170,666	41,657
October	170,666	45,467	216,133	169,435	46,647
November	169,435	40,485	209,920	179,321	30,591
December	179,321	44,042	223,363	198,538	24,852
Total		522,956	614,554	....	390,359
January	198,508	43,652	242,160	208,874	33,035

In instances where the figures are not in balance it is due to shipments to other than domestic consumers.

Lead Prices at New York

(Common Grade)
Monthly Average Prices
(Cents per pound)

	1956	1957	1958	1959
Jan.	16.16	16.00	13.00	12.619
Feb.	16.00	16.00	13.00	11.583
Mar.	16.00	16.00	13.00	....
Apr.	16.00	16.00	12.00	....
May	16.00	15.385	11.712	....
June	16.00	14.32	11.24	....
July	16.00	14.00	11.00	....
Aug.	16.00	14.00	10.85	....
Sept.	16.00	14.00	10.89	....
Oct.	16.00	13.704	12.673	....
Nov.	16.00	13.50	13.00	....
Dec.	16.00	13.00	13.00	....
Aver.	16.013	14.66	12.114	....

Lead Sheet Prices

(To Jobbers, Full Sheets)
Monthly Average Prices
(Cents per pound)

	1956	1957	1958	1959
Jan.	21.66	21.50	18.50	18.119
Feb.	21.50	21.50	18.50	17.083
Mar.	21.50	21.50	18.50	....
Apr.	21.50	21.50	17.50	....
May	21.50	20.885	17.212	....
June	21.50	19.82	16.74	....
July	21.50	19.82	16.50	....
Aug.	21.50	19.50	16.35	....
Sept.	21.50	19.50	16.39	....
Oct.	21.50	19.204	18.173	....
Nov.	21.50	19.00	18.50	....
Dec.	21.50	18.50	18.50	....

Industrial Classification of Domestic Lead Shipments

(American Bureau of Metal Statistics) (In tons of 2,000 lbs.)

	Cable	Amm.	Foil	Batt'y	Brass Making	Sundries	Jobbers	Unclassified
1955								
Total	72,418	27,599	2,622	88,461	3,960	52,994	13,034	270,251
1956								
July	3,497	904	...	5,007	80	2,859	1,453	22,683
Aug.	7,712	1,497	85	6,334	713	4,443	1,262	26,358
Sept.	6,354	1,850	135	6,303	230	5,038	1,339	26,270
Oct.	7,988	1,715	135	7,108	286	4,955	1,493	21,574
Nov.	6,096	2,351	...	8,556	226	5,573	792	23,755
Dec.	6,440	1,449	85	5,832	160	7,258	394	22,573
Total	80,360	24,501	1,435	70,614	3,158	56,851	13,213	274,716
1957								
Jan.	5,297	2,800	200	6,886	671	4,002	1,191	19,502
Feb.	5,103	1,450	350	6,549	508	4,820	625	18,112
Mar.	5,956	752	...	6,479	686	4,614	1,064	18,674
April	6,731	2,250	...	6,242	909	2,958	1,040	17,453
May	6,976	2,200	120	4,705	270	3,871	634	16,558
June	3,726	2,250	75	3,762	666	5,071	1,087	20,620
July	5,249	1,650	105	5,332	566	5,310	1,110	19,260
Aug.	5,406	2,250	220	6,165	650	6,246	1,403	27,066
Sept.	4,880	2,700	295	6,722	850	5,782	891	29,739
Oct.	3,671	3,300	205	5,973	881	4,203	847	21,367
Nov.	2,950	2,500	85	3,126	493	3,800	706	18,533
Dec.	2,499	1,350	36	2,820	270	2,607	529	13,997
Total	58,444	25,452	1,691	64,761	7,420	53,284	11,127	240,881
1958								
Jan.	2,938	550	70	4,775	521	5,173	801	18,594
Feb.	2,899	1,750	70	5,124	90	1,643	888	11,368
Mar.	3,133	1,200	35	4,711	681	3,149	908	15,068
April	3,207	900	70	3,138	580	2,831	533	10,913
May	3,216	1,850	35	4,671	866	3,071	1,027	15,285
June	3,463	1,950	35	2,767	480	4,217	1,716	17,450
July	3,169	1,250	275	3,936	515	4,157	1,052	17,594
Aug.	3,481	2,415	70	4,992	400	6,399	100	16,397
Sept.	4,132	2,290	320	5,775	848	6,771	1,747	19,774
Oct.	3,243	2,450	...	4,548	285	6,210	1,641	28,270
Nov.	3,690	2,150	50	6,527	360	4,887	822	12,105
Dec.	2,267	2,100	50	6,216	215	2,578	652	10,774
Total	38,838	20,855	1,080	57,180	5,841	51,086	11,882	193,592
Jan.	2,284	2,100	100	5,594	161	3,545	727	18,524

Battery Shipments

The following table shows replacement battery shipments in the United States as compiled by the Business Information Division of Dun & Bradstreet, Inc., for the Association of American Battery Manufacturers:

(In thousands of units)

	1956	1957	1958	1959
Jan. . .	2,058	2,638	2,004	2,666
Feb. . .	1,340	1,961	1,803	....
Mar. . .	1,348	1,254	1,577	....
Apr. . .	1,368	1,178	1,242	....
May . .	1,761	1,605	1,454	....
June . .	1,807	1,878	1,773	....
July . .	2,178	2,469	2,101	....
Aug. . .	2,571	2,856	2,333	....
Sept. .	2,711	2,688	2,704	....
Oct. . .	3,015	3,042	2,976	....
Nov. . .	2,592	2,359	2,262	....
Dec. . .	2,265	2,015	3,036	....
Total	25,014	25,943	25,265	....

METALS, MARCH, 1959

Lead Stocks at Primary U. S. Smelters and Refiners

(American Bureau of Metal Statistics)
(In tons of 2,000 lbs.)

	In ore and in process at smelters	At smelters & refineries	In transit to refineries	In process at refineries	Refined pig lead	Anti- monial lead	Total Stocks
1956							
Dec. 1	82,197	9,095	4,132	25,627	25,360	11,832	158,243
1957							
Jan. 1	77,918	12,222	2,846	25,092	29,435	11,746	159,249
Feb. 1	80,451	10,636	4,061	25,827	32,418	10,487	163,880
Mar. 1	81,274	11,880	4,394	25,728	38,479	10,220	171,975
Apr. 1	82,461	14,598	3,593	25,401	36,390	9,794	172,237
May 1	81,061	17,035	2,705	20,890	48,053	9,391	179,135
June 1	81,364	11,585	3,071	21,002	48,286	9,799	175,107
July 1	82,730	12,036	3,560	22,380	55,358	9,503	185,567
Aug. 1	97,111	11,479	2,532	22,917	59,348	8,661	202,048
Sept. 1	84,205	13,029	2,667	22,439	51,080	9,553	182,973
Oct. 1	80,662	11,905	3,175	20,351	44,467	10,215	170,775
Nov. 1	76,230	14,220	2,538	18,695	47,460	11,581	170,724
Dec. 1	65,341	11,646	3,547	21,867	59,755	11,119	173,275
1958							
Jan. 1	79,362	11,019	2,779	23,154	79,741	11,857	207,912
Feb. 1	79,738	11,510	3,678	24,535	88,517	12,689	220,667
Mar. 1	79,588	9,546	3,670	22,834	107,213	12,309	235,250
Apr. 1	83,185	10,692	2,187	21,766	116,810	12,144	246,584
May 1	86,053	11,838	2,138	20,524	130,668	12,468	263,689
June 1	79,482	11,059	2,010	20,188	141,967	13,154	267,860
July 1	80,060	9,012	1,570	22,092	150,648	12,856	276,238
Aug. 1	83,347	12,438	860	21,615	154,378	10,482	283,379
Sept. 1	80,561	15,496	1,176	20,444	158,413	10,889	286,979
Oct. 1	76,534	15,111	2,854	18,125	159,662	11,004	283,290
Nov. 1	66,586	12,926	1,280	19,041	157,385	12,050	269,268
Dec. 1	67,559	11,102	2,683	20,941	167,493	11,828	281,606
1959							
Jan. 1	76,819	13,367	1,866	19,746	185,913	12,595	310,306
Feb. 1	87,429	11,523	2,857	21,317	197,085	11,789	332,000

Receipts of Lead in Ore and Scrap

By U. S. Smelters (a)

(American Bureau of Metal Statistics)

(In tons of 2,000 lbs.)

	—Receipts of lead in ore—			Receipts of lead in scrap etc. (b)	Total receipts in ore, & scrap
	United States	Foreign	Total		
1952 Total	405,990	98,276	504,266	41,845	546,111
1953 Total	351,183	155,788	506,971	42,994	549,965
1954 Total	336,291	158,081	494,372	49,864	544,236
1955 Total	341,595	172,966	514,561	42,996	557,557
1956					
Total	368,499	192,318	560,817	55,925	616,792
1957					
January	30,632	19,961	50,593	4,471	55,064
February	31,410	15,059	46,469	4,564	51,033
March	33,445	18,813	52,258	3,058	55,316
April	31,343	13,042	44,385	2,848	47,233
May	32,138	12,324	44,462	3,431	47,893
June	29,896	19,592	49,488	2,272	51,760
July	29,585	17,936	47,521	2,893	50,414
August	29,225	18,774	47,999	3,190	51,189
September	26,479	13,757	40,236	4,375	44,611
October	29,342	13,782	43,124	4,386	47,510
November	25,809	17,251	43,060	3,258	46,318
December	27,105	26,610	53,715	3,791	57,506
Total	356,409	206,901	563,310	42,537	605,847
1958					
January	25,537	22,097	47,634	3,507	51,141
February	23,789	16,400	40,189	2,184	42,373
March	21,735	20,038	41,773	3,154	44,927
April	25,104	15,821	40,925	1,913	42,838
May	27,427	10,228	37,655	1,867	39,522
June	28,577	13,811	42,388	1,366	43,754
July	22,289	19,692	41,981	1,615	43,596
August	25,075	13,043	38,118	1,265	39,383
September	23,228	14,576	37,804	1,810	39,614
October	21,099	9,093	30,192	3,591	33,783
November	26,314	14,541	40,855	4,018	44,873
December	26,865	18,804	45,669	4,057	49,726
Total	297,039	188,144	485,183	30,347	515,530
1959					
January	27,548	19,449	46,997	3,169	50,166

(a) Receipts of lead in ore are computed on the basis of recoverable lead. Owing to the estimational factor in this, which is probably on the low side, and also to the possibility that some lead receipts may escape attention, these monthly totals probably underrun the actual production of pig lead. (b) Inclusive only of scrap smelted in connection with ore, plus some scrap received by primary refiners.

METALS, MARCH, 1959

N. Y. Lead Price Changes

(Effective Date)

1951	1952	1953	1954	1955	1956	1957	1958	1959
Oct. 2...19.00	Apr. 1...13.75	Jan. 7...14.50	Jan. 18...13.00	Jan. 18...13.00	Jan. 18...13.00	Jan. 18...13.00	Jan. 18...13.00	Jan. 18...13.00
Apr. 29...18.00	Apr. 12...14.00	Jan. 12...14.00	Feb. 18...12.50	May 16...15.00	Feb. 18...12.50	Mar. 9...12.75	Jan. 21...12.00	Jan. 21...12.00
May 2...17.00	June 2...14.25	Feb. 2...13.50	Mar. 9...12.75	June 11...14.00	Mar. 10...13.00	Mar. 26...13.25	Feb. 11...11.50	Feb. 11...11.50
May 12...15.00	June 15...14.00	Mar. 4...13.90	Mar. 10...13.00	Oct. 14...13.50	Mar. 26...13.25	Mar. 29...13.50	Feb. 24...11.00	Feb. 24...11.00
June 23...15.50	Sept. 7...14.50	Mar. 10...13.50	Apr. 7...13.00	Dec. 2...13.00	Mar. 29...13.50		Mar. 5...11.50	Mar. 5...11.50
June 24...16.00	Sept. 15...14.75	Apr. 7...13.00	Apr. 16...12.50					
Oct. 7...15.00	Oct. 4...14.875	Apr. 21...12.00	Apr. 21...12.00					
Oct. 14...14.00	Oct. 5...15.00	Apr. 29...12.50	Apr. 29...12.50					
Oct. 22...13.50	1955	May 18...12.75	May 19...13.00					
Nov. 3...14.00	Sept. 23...15.00-	May 19...13.00	May 26...13.15					
Nov. 10...14.20	15.50	May 26...13.15	June 11...13.50					
Nov. 11...14.50	Sept. 26...15.50	June 11...13.50	July 20...13.75					
Nov. 20...14.25	Dec. 29...16.00	June 18...11.50	July 23...14.00					
Nov. 24...14.00	1956	July 1...11.00	Sept. 16...13.50					
Dec. 22...14.25	Jan. 4...16.50	Aug. 13...10.75	Oct. 2...12.00					
Dec. 29...14.50	Jan. 13...16.00	Sept. 17...11.00	Oct. 8...12.50					
Dec. 31...14.75	1957	Sept. 30...11.50	Oct. 14...13.00					
	May 9...15.50	Oct. 2...12.00						
	May 16...15.00	Oct. 8...12.50						
	June 11...14.00	Oct. 14...13.00						
	Oct. 14...13.50							
	Dec. 2...13.00							
	1958							
	Apr. 1...12.00							
	May 14...11.50							
	June 3...11.00							
	June 18...11.50							
	July 1...11.00							
	Aug. 13...10.75							
	Sept. 17...11.00							
	Sept. 30...11.50							
	Oct. 2...12.00							
	Oct. 8...12.50							
	Oct. 14...13.00							
	1959							
	Jan. 21...12.00							
	Feb. 11...11.50							
	Feb. 24...11.00							
	Mar. 5...11.50							

**OPS Ceiling.

Antimonial Lead Stocks at Primary Refineries

(A.B.M.S.)

End of	1956	1957	1958	1959
Jan. ..	8,389	10,487	12,689	11,789
Feb. ..	9,095	10,220	12,309	...
Mar. ..	10,289	9,794	12,144	...
Apr. ..	10,690	9,391	12,468	...
May ..	10,902	9,799	13,154	...
June ..	9,452	9,503	12,856	...
July ..	10,924	8,661	10,482	...
Aug. ..	10,074	9,553	10,889	...
Sept. ..	11,181	10,215	11,004	...
Oct. ..	11,382	11,581	12,050	...
Nov. ..	11,832	11,119	11,828	...
Dec. ..	11,746	11,857	12,595	...

Antimonial Lead Production by Primary Refineries

(A.B.M.S.)

End of	1956	1957	1958	1959
Jan. ..	5,045	5,113	3,743	3,541
Feb. ..	5,888	5,468	3,657	...
Mar. ..	5,526	5,091	3,527	...
Apr. ..	5,818	6,183	3,655	...
May ..	5,405	6,978	4,827	...
June ..	4,456	4,466	3,992	...
July ..	3,853	5,372	2,775	...
Aug. ..	5,343	7,967	5,244	...
Sept. ..	6,709	7,574	4,761	...
Oct. ..	5,378	6,148	5,849	...
Nov. ..	6,993	3,791	3,913	...
Dec. ..	5,766	3,290	4,539	...

Total 66,180 67,541 50,482

Lead Imports and Exports By Principal Countries

(A. B. M. S.)

Reported in pigs, bars, etc.; metric tons except where otherwise noted.

	1958		
	Oct.	Nov.	Dec.
IMPORTS			
U. S.† (s.t.)	20,001	19,929	...
Denmark	3,710	2,416	1,083
France	5,902	3,498	3,677
Germany, West††	4,195	3,877	...
Italy†	1,265	...	...
Netherlands	2,925	2,582	3,275
Norway	306	...	...
Sweden	1,519	977	...
Switzerland	1,615	1,955	1,479
U. K. (l.t.)	6,689	9,915	23,248
India* (l.t.)	1,360	1,905	...
EXPORTS			
U. S.† (s.t.)	595	27	...
Canada (s.t.)	10,320	10,641	11,352
Denmark	1,731	1,198	600
France	828	2,207	2,268
Germany, West††	3,094	2,231	...
Italy†	12	...	...
Netherlands	298	409	234
Sweden	3,424	2,565	...
Switzerland	30	...	...
Northern			
Rhodesia* (l.t.)	1,029	1,135	...
Australia* (l.t.)	16,578	...	...

† Refined.

†† Includes scrap.

‡ Includes lead alloys.

* British Bureau of Non-Ferrous Metal Statistics.

French Lead Imports

(A. B. M. S.)

	(In metric tons)		1959 Jan.
	Nov.	Dec.	
Ore, gr. wt.)	8,584	7,754	6,876
Algeria		438	
Morocco	8,584	6,369	5,976
Fr. Eq. Africa		947	900
Pig lead	3,498	3,677	3,858
Belgium		95	
Algeria	22	5	1
Morocco	1,834	1,813	1,151
Tunisia	1,616	1,764	2,447
Australia	26		254
Other countries			5
Antimonial lead	31	36	32

U. K. Lead Imports

(British Bureau of Non-Ferrous Metal Statistics)

	(In tons of 2,240 lbs.)		1959 Jan.
	Nov.	Dec.	
(Gross Weight)			
Lead and lead alloy	9,915	23,248	19,621
Australia	7,517	14,768	10,131
Canada	1,495	7,363	7,456
Belgium	400	575	103
Other countries	503	542	1,931

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DAILY METAL REPORTER**

U. S. Lead Consumption

(Bureau of Mines — In Short Tons)

	1957		1958	
	Totals	Preliminary Totals	Inary Totals	Dec. 1958
Metal Products				
Ammunition	42,509	40,202	3,265	
Bearing metals	26,997	18,448	1,699	
Brass and bronze	24,491	19,646	1,857	
Cable covering	108,225	74,535	6,185	
Calking lead	65,634	66,234	4,782	
Casting metals	12,672	7,702	556	
Collapsible tubes	10,316	7,710	1,136	
Foil	4,839	4,567	184	
Pipes, traps & bends	27,739	21,776	1,857	
Sheet lead	27,474	24,682	2,324	
Solder	70,684	57,241	4,603	
Storage battery grids, posts, etc.	185,617	154,828	15,399	
Storage battery oxides	175,398	162,846	14,603	
Terne metal	1,642	1,525	115	
Type metal	28,726	26,313	2,299	
Total	809,963	678,254	60,860	
Pigments:				
White lead	15,701	12,658	833	
Red lead and litharge	78,323	63,816	5,153	
Pigment colors	12,449	11,853	963	
Other*	8,888	4,357	458	
Total	115,361	92,684	7,407	
Chemicals:				
Tetraethyl lead	177,001	168,302	11,788	
Misc. chemicals	3,556	2,791	342	
Total	180,557	161,093	12,680	
Miscellaneous uses:				
Annealing	5,317	4,354	393	
Galvanizing	1,354	1,067	87	
Lead plating	670	125	8	
Weights and ballast	7,526	5,887	365	
Total	14,867	11,433	853	
Other uses:				
Unclassified	17,367	14,912	1,127	
Total reported†	1,138,115	958,376	82,327	
Estimated unreported consumption		24,000	2,000	
Grand total†	1,138,115	982,400	84,327	
Daily average‡	3,118	2,691	2,719	

* Includes lead content of leaded zinc oxide production.

† Includes lead content of scrap used directly in fabricated products.

‡ Based on number of days in month without adjustment for Sundays and holidays.

U. K. Lead Consumption

(British Bureau of Non-Ferrous Metal Statistics)

	(In tons of 2,240 pounds)		
	1957	1958	1959
Jan.	29,657	29,607	28,872
Feb.	29,219	27,855	...
Mar.	29,144	29,713	...
Apr.	27,246	26,230	...
May	31,574	28,839	...
June	28,607	28,624	...
July	27,604	27,201	...
Aug.	24,756	21,726	...
Sept.	29,519	28,829	...
Oct.	32,486	31,356	...
Nov.	31,060	28,786	...
Dec.	26,530	27,154	...
Total	347,699	335,920	...

American Antimony

	Monthly Average Prices			
	In bulk, f.o.b. Laredo		(Cents per lb. in ton lots)	
	1956	1957	1958	1959
Jan.	33.00	33.00	33.00	29.00
Feb.	33.00	33.00	30.818	29.00
Mar.	33.00	33.00	29.00	...
Apr.	33.00	33.00	29.00	...
May	33.00	33.00	29.00	...
June	33.00	33.00	29.00	...
July	33.00	33.00	29.00	...
Aug.	33.00	33.00	29.00	...
Sept.	33.00	33.00	29.00	...
Oct.	33.00	33.00	29.00	...
Nov.	33.00	33.00	29.00	...
Dec.	33.00	33.00	29.00	...
Aver.	33.00	33.00	29.485	...

Consumers' Lead Stocks, Receipts and Consumption

(Bureau of Mines — In Short Tons)

	Stocks		Net Receipts in Dec.	Consumed in Aug.	Stocks Dec. 31, 1958
	Nov. 30, 1958	Nov. 30, 1958			
Soft lead	75,250	48,960	51,619	72,591	...
Antimonial lead	34,525	22,028	21,836	34,717	...
Lead in alloys	6,940	3,734	3,871	6,803	...
Lead in copper-base scrap	1,557	1,525	1,440	1,642	...
Total	118,272	76,247	*78,766	115,753	...

* Excludes 3,110 tons of lead which went directly from scrap to fabricated products and 451 tons of lead contained in leaded zinc oxide production.

Consumption of Lead by Class of Product

(Bureau of Mines — In Short Tons)

	DECEMBER				Total
	Soft lead	Antimonial lead	Lead in alloys	Lead in copper-base scrap	
Metal products	31,111	21,388	3,849	1,440	57,788
Pigments	6,949	7	...	...	6,956
Chemicals	12,080	...	...	...	12,080
Miscellaneous	551	302	...	...	853
Unclassified	928	139	22	...	1,089
Total	51,619	21,836	3,871	1,440	*78,766

* Excludes 3,110 tons of lead which went directly from scrap to fabricated products and 451 tons of lead contained in leaded zinc oxide production.

METALS, MARCH, 1959

Domestic Zinc Statistics

American Zinc Institute

Commencing with January, 1945, all regularly operating U. S. primary and secondary smelters are included in this report. Production from foreign ores also is included. (Tons of 2,000 lbs.)

	Stock Begin- ning	Pro- duction	Domestic	Export & Drawback	Gov't Acc't	Total	Stock at End	Daily Avg. Prod.
1950 Total	94,221	910,354	849,246	18,189	128,256	995,691	8,884	2,494
1950 Mo. Avg.		75,863	70,770	1,516	10,688	82,974		
1951 Total	8,884	951,833	836,800	42,067	39,946	918,816	21,901	2,553
1951 Mo. Avg.		77,653	69,733	3,506	3,329	76,568		
1952 Total	21,901	961,430	803,343	56,202	36,626	896,171	87,160	2,627
1952 Mo. Avg.		80,119	66,945	4,693	3,052	74,681		
1953 Total	87,160	971,191	818,850	16,326	42,332	877,508	180,843	2,661
1953 Mo. Avg.		80,933	68,238	1,361	3,528	73,126		
1954 Total	180,843	868,242	787,922	27,929	108,957	924,808	124,277	2,379
1954 Mo. Avg.		72,353	65,660	2,327	9,080	77,067		
1955 Total	40,979	1,051,018	1,007,619	19,497	87,200	1,114,316	40,979	2,825
1955 Mo. Avg.		85,918	83,968	1,626	7,267	82,860		
1956								
November	88,810	91,808	82,478	787	27,168	110,433	70,185	3,060
December	70,185	98,234	80,772	671	18,354	99,797	68,622	3,169
1956 Total		1,062,954	869,270	9,027	157,014	1,035,311	68,622	2,904
1956 Mo. Avg.		88,560	72,439	752	13,085	86,275		
1957								
January	68,622	93,452	67,273	450	15,377	83,100	78,974	3,014
February	78,974	88,078	67,731	1,527	10,905	80,163	86,889	3,146
March	86,889	96,924	67,441	1,558	25,608	94,607	89,357	3,127
April	89,357	96,506	55,000	1,411	23,921	80,332	105,531	3,217
May	105,531	96,855	60,729	2,106	26,858	89,693	112,693	3,124
June	112,693	90,719	54,275	1,358	14,324	69,957	133,455	3,024
July	133,455	85,779	57,862	4,497	11,186	73,055	146,179	2,767
August	146,179	84,166	70,318	860	9,871	81,049	149,296	2,715
September	149,296	77,455	62,111	590	10,344	72,985	155,766	2,582
October	153,766	81,492	66,225	372	12,736	79,333	155,925	2,629
November	155,925	79,754	73,437	581	9,148	83,166	152,531	2,658
December	152,531	86,270	62,730	210	9,188	72,128	166,655	2,783
1957 Total		1,067,450	765,132	15,460	179,466	815,567		
1958								
January	166,655	82,343	58,211	641	9,805	68,657	180,346	2,656
February	180,346	68,354	49,072	446	9,993	59,511	189,189	2,441
March	189,189	72,274	48,948	111	8,763	57,822	208,641	2,331
April	203,641	70,214	46,598	159	5,927	52,684	221,171	2,340
May	221,171	71,018	51,390	129	....	51,519	240,670	2,291
June	240,670	66,967	54,487	171	....	54,658	252,979	2,232
July	252,979	65,119	60,312	55	....	60,187	257,911	2,101
August	257,911	62,927	68,718	591	....	69,309	251,529	2,030
September	251,529	63,705	76,905	213	....	77,118	238,116	2,124
October	238,116	65,304	95,018	226	....	93,224	210,176	2,107
November	210,176	65,174	83,394	212	....	83,606	191,744	2,172
December	191,744	75,503	76,862	148	....	77,010	190,237	2,432
1958 Total		828,902	767,755	3,102	34,488	805,325		
1959								
January	190,237	76,481	70,770	171	....	70,941	195,777	2,467
February	195,777	71,174	65,641	849	....	66,490	200,461	2,542

U. S. Consumption of Slab Zinc

Bureau of Mines By Industries (Short Tons)

	Galvan- izers	Die Casters	Brass products	Roller zinc	Zinc oxide & other	Total
1950 Total	434,094	281,885	136,451	67,779	27,656	947,365
1951 Total	386,378	266,442	141,456	64,000	28,738	887,009
1952 Total	375,563	236,022	155,311	51,508	30,885	849,289
1953 Total	403,192	306,346	177,801	53,784	38,037	977,636
1954 Total	398,599	286,817	107,293	45,979	33,342	876,130
1955 Total	439,694	404,790	144,816	50,363	39,302	1,081,468
1956						
October	40,875	34,985	10,164	4,158	3,695	93,877
November	36,767	32,812	9,581	3,625	3,439	87,234
December	32,790	33,238	8,799	3,140	3,505	82,272
Total	421,218	352,451	122,395	45,382	36,251	988,097
1957						
January	34,337	37,517	10,800	3,502	3,434	90,490
February	31,686	32,520	9,156	3,284	3,206	80,752
March	30,747	30,946	8,860	3,553	3,378	78,384
April	30,631	29,166	9,491	4,001	3,300	77,489
May	30,537	28,423	9,563	3,389	3,097	75,909
June	29,907	27,688	8,710	3,613	2,646	73,464
July	26,067	26,116	6,361	2,698	2,981	65,123
August	27,885	29,237	9,755	3,686	3,099	74,562
September	28,651	31,051	9,588	2,911	1,590	75,976
October	32,940	35,499	10,952	3,385	1,783	87,898
November	28,025	31,396	10,024	2,843	1,255	76,595
December	24,383	27,927	7,854	2,679	1,427	67,421
Total	355,796	358,543	111,114	39,544	20,486	924,063
1958						
January	26,861	26,348	9,115	3,183	1,664	69,295
February	24,598	22,629	7,279	2,716	1,316	60,347
March	27,171	19,045	6,871	3,138	1,794	59,978
April	27,464	17,829	6,392	3,259	1,295	58,432
May	30,935	18,316	6,597	2,896	2,263	61,907
June	34,377	21,497	6,643	2,961	2,212	67,690
July	30,677	17,387	6,275	2,848	1,920	60,007
August	34,663	20,382	8,358	3,379	1,901	70,033
September	34,048	25,188	9,624	3,458	770	74,122
October	36,513	27,682	11,753	3,845	881	81,919
November	31,658	27,311	10,067	3,276	826	74,302

METALS, MARCH, 1959

Prime Western Zinc Prices (East St. Louis, f.o.b.)

	(Cents per pound) (In tons of 2,240 pounds)			
	1956	1957	1958	1959
Jan.	13.46	13.50	10.00	11.50
Feb.	13.50	13.50	10.00	11.411
Mar.	13.50	13.50	10.00	....
Apr.	13.50	13.50	10.00	....
May	13.50	11.933	10.00	....
June	13.50	10.84	10.00	....
July	13.50	10.00	10.00	....
Aug.	13.50	10.00	10.00	....
Sept.	13.50	10.00	10.00	....
Oct.	13.50	10.00	10.865	....
Nov.	13.50	10.00	11.386	....
Dec.	13.50	10.00	11.50	....
Aver.	13.497	11.40	10.313	....

High Grade Zinc Prices

	(Delivered) N. Y. Monthly Averages (Cents per pound)			
	1956	1957	1958	1959
Jan.	14.81	14.85	11.35	12.50
Feb.	14.85	14.85	11.35	12.411
Mar.	14.85	14.85	11.35	....
Apr.	14.85	14.85	11.084	....
May	14.85	13.283	11.00	....
June	14.85	12.19	11.00	....
July	14.85	11.35	11.00	....
Aug.	14.85	11.35	11.00	....
Sept.	14.85	11.35	11.00	....
Oct.	14.85	11.35	11.865	....
Nov.	14.85	11.35	12.386	....
Dec.	14.85	11.35	12.50	....
Aver.	14.847	12.75	11.407	....

U. K. Zinc Consumption

	(British Bureau of Non-Ferrous Metal Statistics) (In Tons of 2,240 Pounds)		
	1957	1958	1959
Jan.	28,485	27,473	27,849
Feb.	26,276	24,551	....
Mar.	27,049	26,967	....
Apr.	24,247	24,984	....
May	29,589	24,579	....
June	25,202	25,587	....
July	25,934	23,794	....
Aug.	20,381	19,076	....
Sept.	27,792	26,747
Oct.	29,552	29,838
Nov.	26,705	26,432
Dec.	24,419	26,042
Total	315,631	306,070

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DAILY METAL REPORTER

Mine Production of Zinc in United States (U. S. Bureau of Mines)

	(In short tons)			Total U.S.*
	Eastern States	Central States	Western States	
1953				
Total	183,612	57,300	293,818	534,730
1954				
Total	166,487	63,100	234,942	464,539
1955				
Total	163,230	73,630	277,811	514,671
1956				
Total	175,310	61,080	301,253	537,643
1957				
May	17,066	1,744	28,314	47,123
June	16,981	2,855	25,664	45,940
July	15,391	2,679	24,602	42,672
Aug.	17,078	1,858	23,440	42,376
Sept.	14,111	187	20,481	34,779
Oct.	17,839	188	21,323	34,390
Nov.	14,874	180	19,213	34,967
Dec.	13,893	173	18,683	34,364
Total	196,877	29,506	290,151	520,128
1958				
Jan.	16,165	1,682	20,861	38,708
Feb.	13,652	1,365	18,528	33,545
Mar.	13,922	1,291	20,411	35,624
Apr.	15,719	1,311	22,375	39,405
May	15,580	1,314	18,940	35,834
June	14,931	1,490	16,650	32,971
July	13,427	—	15,985	29,442
Aug.	15,760	—	13,627	29,387
Sept.	14,857	—	15,279	29,865
Oct.	16,197	—	16,074	32,271
Nov.	15,393	—	16,998	32,391

*Includes Alaskan output in some months.

Mine Production of Lead in United States (U. S. Bureau of Mines)

	(In short tons)			Total U.S.*
	Eastern States	Central States	Western States	
1953				
Ttl.	9,970	136,650	188,776	335,412
1954				
Ttl.	8,608	138,940	169,804	317,352
1955				
Ttl.	10,379	145,640	177,409	333,409
1956				
Ttl.	11,395	141,900	195,034	348,329
1957				
June	648	10,569	15,500	26,717
July	532	11,430	15,032	26,994
Aug.	674	11,168	15,654	27,490
Sept.	744	9,935	14,087	24,766
Oct.	759	12,392	14,950	28,101
Nov.	619	10,170	12,519	23,308
Dec.	599	9,887	12,393	22,880
Ttl.	9,300	135,800	188,392	333,493
1958				
Jan.	675	12,513	12,613	25,801
Feb.	542	11,356	11,734	23,632
Mar.	526	4,633	13,148	18,307
Apr.	487	12,438	12,739	25,664
May	626	11,660	11,939	24,225
June	615	10,662	11,499	22,776
July	454	10,019	10,662	21,135
Aug.	447	8,859	9,512	18,818
Sept.	389	7,734	11,221	19,344
Oct.	517	9,290	11,467	21,274
Nov.	606	10,500	11,823	22,929
Dec.	565	9,600	11,699	21,865
Ttl.	6,816	119,070	140,033	265,920

Mine Production of Gold in United States (U. S. Bureau of Mines) (In fine ounces)

	Eastern States	Western States	Alaska*	Total
1953				
Ttl.	2,026	1,634,625	247,535	1,884,186
1954				
Ttl.	1,998	1,607,930	204,300	1,814,228
1957				
May	165	137,953	5,839	143,957
June	204	129,196	11,457	140,857
July	203	128,073	33,723	161,999
Aug.	192	126,219	37,933	164,344
Sept.	178	124,454	42,434	167,066
Oct.	183	136,248	38,585	175,016
Nov.	182	125,796	27,000	152,978
Dec.	181	123,250	6,790	130,221
Ttl.	2,174	1,556,450	210,000	1,768,624
1958				
Jan.	207	134,282	2,736	137,226
Feb.	147	116,392	59	116,598
Mar.	174	123,808	96	124,078
Apr.	192	124,705	906	125,615
May	203	124,490	557	125,520
June	182	122,277	8,484	130,943
July	38	116,775	29,735	146,528
Aug.	174	113,281	34,947	148,202
Sept.	156	128,613	38,960	167,459
Oct.	186	135,882	42,467	178,535

* Alaska totals based on mint and smelter receipts.

U. S. Silver Production* (A.B.M.S.)

	(In thousands of ounces; commercial bars, 0.999 fine, and other refined forms)		Total
	Domestic	Foreign	
1954 Total	38,059	39,422	77,481
1955 Total	33,101	32,780	65,881
1956 Total	38,187	40,160	78,317
1957			
July	2,859	3,452	6,311
Aug.	2,500	2,558	5,058
Sept.	2,937	3,263	6,200
Oct.	3,334	3,419	6,753
Nov.	2,731	3,374	6,105
Dec.	3,029	2,872	5,901
Total	36,279	34,932	71,211
1958			
January	3,520	3,551	7,071
February	3,589	2,790	6,379
March	2,465	3,568	6,033
April	3,123	3,056	6,179
May	2,597	2,660	5,257
June	3,243	3,210	6,453
July	2,127	2,494	4,621
August	2,651	3,235	5,886
September	2,614	3,165	5,779
October	3,831	2,750	6,581
November	2,505	3,283	5,788
December	3,275	3,652	6,927
Total	35,540	37,414	72,954
1959			
January	2,330	4,460	6,790

* The separation between silver of foreign and domestic origin on the basis of refined bars and other refined forms is only approximate.

† Includes purchases of crude silver by the U. S. Mint.

Mine Production of Recoverable Silver in United States (U. S. Bureau of Mines)

	(In Fine Ounces)			
	Eastern States	Missouri	Western States	Alaska*
1955 Total	159,038	438,000	36,103,723	33,804
1956 Total	553,982	377,200	36,169,267	26,700
1957				
October	47,892	29,800	3,036,720	4,816
November	50,821	8,020	2,690,456	3,537
December	50,825	7,000	2,673,590	810
Total	610,386	240,000	37,018,950	26,000
1958				
January	45,358	17,400	2,939,634	—
February	38,608	16,000	2,788,072	—
March	38,134	5,500	2,834,641	72
April	38,308	17,800	2,807,664	453
May	41,840	22,870	2,746,539	1,189
June	3,637	21,300	2,775,606	3,154
July	7,723	21,840	2,503,013	4,584
August	8,819	19,970	2,836,937	5,968
September	5,783	17,180	2,621,537	3,392
October	5,653	20,600	2,749,976	5,338
November	†	16,000	†	3,175
December	†	13,730	†	675
Total	†	210,000	†	28,000

† Figures not available.

* Alaska totals based on mint and smelter receipts.

Production of Primary Aluminum in the U. S. (U. S. Bureau of Mines)

	(In short tons)						
	1952	1953	1954	1955	1956	1957	1958
Jan.	76,934	89,895	116,247	128,203	140,394	147,029	139,910
Feb.	72,374	92,049	110,483	116,236	132,763	119,059	121,980
Mar.	77,069	104,460	122,339	130,272	145,895	135,706	134,019
Apr.	76,880	102,071	120,434	126,394	144,726	139,152	128,559
May	80,803	105,464	125,138	131,128	150,800	145,174	129,083
June	77,476	104,152	120,758	127,634	145,726	138,007	115,325
July	78,368	109,285	126,161	132,669	151,624	142,157	118,811
Aug.	85,175	110,545	125,296	133,551	92,406	143,449	125,416
Sept.	76,882	109,333	120,332	130,606	132,316	129,278	124,713
Oct.	77,312	108,219	125,089	134,655	149,125	133,759	139,847
Nov.	74,639	105,636	121,252	133,689	145,081	135,024	140,962
Dec.	83,419	110,291	127,056	140,748	148,391	140,033	153,301
Ttl.	937,330	1,252,013	1,460,565	1,565,721	1,679,427	1,647,710	1,565,556

Average Silver Prices

	(Cents per fine ounce)		
	1956	1957	1958
Jan.	90.357	91.375	89.449
Feb.	90.90	91.375	88.625
Mar.	91.128	91.375	88.625
Apr.	90.875	91.375	88.625
May	90.75	91.307	88.625
June	90.46	90.456	88.625
July	90.14	90.31	88.625
Aug.	90.614	90.909	88.625
Sept.	90.75	90.602	88.673
Oct.	90.722	90.625	89.966
Nov.	91.375	90.382	90.125
Dec.	91.375	89.80	89.932
Aver.	90.79	90.824	89.043

Note — The averages are based on the price of refined bullion imported on or after August 31, 1943.

METALS, MARCH, 1959

U. S. Copper Imports

(A.B.M.S.) (Bureau of the Census)

(In tons of 2,000 lbs.)

	1957	1958	
	Jan.-Dec.	Jan.-Dec.	Dec.
Ore, matte & regulus (cont.)	124,780	92,602	5,140
Canada	29,540	7,876	133
Mexico	7,141	5,670	307
Cuba	16,850	13,991	829
Argentina	307	514	8
Bolivia	4,463	3,396	583
Chile	17,366	16,380	1,853
Peru	12,916	9,947	795
Cyprus	8,937	6,384	...
Philippines	13,067	14,521	1
Union of South Africa	13,081	12,918	535
Australia	998	629	95
Other countries	114	376	1

Blister copper (content)	301,182	268,178	30,318
Mexico	37,574	40,029	3,088
Chile	208,460	183,052	24,265
Peru	14,486	9,130	1,714

Rhodesia & Nyasaland	16,728	16,776	...
Union of South Africa	5,744	13,654	1,250
Turkey	3,496	1,094	...
Australia	14,078	4,438	...
Other countries	616	5	1

Refined cathodes & shapes	162,308	127,630	4,453
Canada	87,482	62,016	3,108
Mexico	2,924	4,235	...
Chile	10,190	713	...
Peru	14,224	11,348	599
Belgium	447	56	...

Germany, (West)	2,545	4,158	18
Sweden	2,688	1,063	...
U. Kingdom	2,413	6,957	...
Belgian Congo	10,221	15,515	...
Rhodesia & Nyasaland	28,054	18,052	728
Union of South Africa	1,120	2,596	...
Other countries	...	921	...

Total Imports:			
Crude and refined	588,270	488,410	39,911
Old and scrap (content)	5,757	7,060	499
Composition metal (content)	164	22	2
Brass scrap & old (cu. cont.)	4,625	5,347	392

U. S. Zinc Imports

(A.B.M.S.) (Bureau of the Census)

(In tons of 2,000 lbs.)

	1957	1958	
	Jan.-Dec.	Jan.-Dec.	Dec.
Zinc ore (content)	525,730	462,899	48,082
Canada	158,220	155,927	15,372
Mexico	192,519	158,607	15,914
Cuba	1,209	222	...
Guatemala	9,262	6,483	...
Honduras	2,589	1,435	122
Bolivia	7,633	8,220	1,266
Colombia	1	118	...
Chile	1,400	978	...
Peru	118,771	103,002	11,276
U. of S. Africa	21,048	21,700	3,751
Australia	8,756	4,698	202
Philippines	777	93	14
Other countries	3,545	1,416	165
Zinc blocks, pigs, etc.	269,034	195,143	18,669
Canada	103,964	93,423	7,035

Mexico	23,536	23,256	3,032
Peru	22,947	9,734	1,537
Austria	1,018	110	...
Belgium	34,191	21,707	660
Germany (W.)	8,772	2,671	615
Italy	10,010	6,164	165
Netherlands	2,504	2,520	1,790
Norway	...	2,770	224
U. Kingdom	1,790	672	...
Yugoslavia	10,909	5,781	55
Belg. Congo	33,007	20,991	2,721
Rhodesia & Nyasaland	3,384	1,064	504
Australia	9,523	2,241	...
Japan	2,887	2,039	331
Other countries	592	...	...

Total Imports:

Zinc ore, blocks, pigs	794,764	658,042	66,751
Dross & skim.	363	738	44
Old & worn out	227	234	...

U. S. Copper Scrap Exports

(A.B.M.S.) (Bureau of the Census)

(In tons of 2,000 lbs.)

	1957	1958	
	Jan.-Dec.	Jan.-Dec.	Dec.
Copper scrap, unalloyed* (new & old)	48,989	21,859	2,739
Canada	3,595	393	170
Belgium	256	127	60
France	3,754	3,024	...
Germany (West)	10,670	12,905	1,451
Italy	...	2,078	296
Netherlands	429	814	166
Spain	183	424	63
Sweden	281	...	...
Switzerland	189	...	...
United Kingdom	883	35	...
India	561	1,243	69
Japan	26,983	58	...
Hong Kong	342	11	11
Other countries	872	747	1,453
Copper-base scrap, alloyed† (new & old)	69,996	28,501	3,987
Canada	67	355	8
Mexico	6	4	...
Belgium	620	78	...
France	4,865	1,785	49
Germany (West)	18,610	7,075	1,007
Italy	7,425	2,732	137
Netherlands	453	1,055	218
Portugal	252	170	27
Spain	417	925	64
Switzerland	698	293	111
United Kingdom	1,058	58	...
India	3,068	650	78
Japan	31,555	12,973	2,193
Hong Kong	825	228	66
Other countries	77	120	34

* Ash, brass mill, clippings, dross, flue dust, residues, scale, skimmings, wire scrap.
† Copper-base alloys, including brass and bronze—ashes, clippings for remanufacture, cupro-nickel scrap, cupro-nickel trimmings, nickel silver scrap, phosphor bronze, phosphor copper, skimmings, turnings, round.
‡ Includes 419 tons to Hungary.

U. S. Copper Exports

(A.B.M.S.) (Bureau of the Census)

(In tons of 2,000 lbs.)

	1957	1958	
	Jan.-Dec.	Jan.-Dec.	Dec.
Ore, conc., matte & other unref. (cont.)	15,656	11,475	396
Refined ingots, bars, etc.*	346,025	384,868	45,587
Canada	3,546	2,644	755
Mexico	151	707	...
Cuba	6	802	...
Argentina	11,152	13,007	2,794
Brazil	8,776	8,874	2,261
Uruguay	260	...	...
Austria	224	202	...
Belgium	1,127	2,156	84
Denmark	800	806	112
France	54,687	91,156	11,784
Germany (W.)	50,773	65,831	5,137
Italy	33,535	30,547	2,900
Netherlands	7,846	14,251	2,824
Norway	3,212	4,175	850
Portugal	50	113	...
Spain	2,192	66	...

Sweden	2,519	7,165	2,687
Switzerland	14,621	11,394	1,006
U. Kingdom	89,650	115,463	11,386
Yugoslavia	4,500	3,640	...
Formosa	129	563	...
India	7,617	950	112
Japan	46,850	8,750	872
Korea	211	466	...
U. of S. Africa	535	...	...
Australia	560	672	...
Other countries	496	468	23

Total Exports:

Crude & ref.	361,681	396,343	45,983
Pipes & tubes	1,354	1,588	69
Plates & sheets	265	161	10
Rods and brush-copper, castings, rolls segments (finished forms) n.e.s.	1,895	2,302	255
Wire, bare	11,119	5,020	167
Building wire and cable†	3,764	2,740	219
Weatherproof wire†	711	235	1
Insulated cop-wire n.e.s.†	16,560	11,447	788

* Includes exports of refined copper resulting from scrap that was reprocessed on toll for account of the shipper.
† Gross weight; n.e.s.—Not elsewhere specified.

U. S. Lead Imports

(A.B.M.S.) (Bureau of the Census)

(In tons of 2,000 lbs.)

	1957	1958	
	Jan.-Dec.	Jan.-Dec.	Dec.
Ore, matte, etc. (Content)	197,831	201,646	18,313
Canada	25,193	22,262	2,501
Greenland	...	5,277	...
Mexico	3,835	1,798	44
Guatemala	8,623	5,019	...
Honduras	2,955	3,583	259
Argentina	974	46	...
Bolivia	18,319	14,714	830
Chile	35	368	178
Colombia	...	850	...
Peru	55,450	70,786	3,527
Union of South Africa	43,916	49,216	6,835
Australia	36,995	25,851	4,037
Philippines	783	1,168	84
Korea	246	311	...
Other countries	507	397	18
Base bullion (content)	84	460	...
Canada	84	117	...
Other countries	...	340	...
Pigs and bars	324,279	368,449	32,833
Canada	28,607	40,925	1,996
Mexico	102,504	122,864	7,632
Peru	34,999	42,474	3,125
Belgium	1,852	5,872	430
Denmark	1,916	1,574	124
France	557	55	...
Germany (West)	1,550	3,118	110
Netherlands	110	286	...
Spain	3,119	14,236	2,298
United Kingdom	2,666	8,837	501
Yugoslavia	40,262	36,789	3,091
Morocco	9,018	10,537	777
Australia	95,517	80,516	12,618
Other countries	1,602	366	221

Total Imports:			
Ore base, bullion, refined	522,194	570,555	51,146
Lead scrap, drosses, etc. (cont.)	9,247	6,571	1,547
Antimonial lead and typemetal	5,274	5,294	272
Lead content there-of	4,859	4,551	258

Comparative Metal Prices

	Av.	OPA	1959
Copper domestic	1939	1946	Feb. 16
Electro., Del. Val	11.20	14.375	31.50
Lead (N. Y.)	5.05	8.25	11.50
P. W. Zinc (E. St. Louis, f.o.b.)	5.05	5.05	11.00
New York, del.	...	...	11.50
Tin, Spot Straits, N. Y.	...	...	103.375
Aluminum ingot 99 1/2% + 20.00	15.00	15.00	26.80
Antimony (R.M.M. brand, f.o.b. Laredo)	12.36	14.50	29.00

World Production of Copper (American Bureau of Metal Statistics)

	United States	Canada	Mexico (crude)	Chile	Peru	Fed. Rep. of Germany	Norway	United Kingdom	Yugoslavia	India	Japan	Turkey	Australia	Northern Rhodesia	Union of South Africa
	(a)	(b)	(c)	(d)	(e)	(f)	(g-h)	(i)	(j-k)	(l)	(m)	(n)	(o)	(p)	(q)
1955															
Total	1,036,702	326,599	61,583	447,288	35,478	286,805	14,576	138,271	31,151	8,432	124,903	26,313	41,935	350,302	47,176
1956															
Total	1,133,134	356,251	69,918	506,251	35,095	270,461	16,487	127,365	32,390	8,827	189,062	27,101	55,711	435,186	47,914
1957															
Sept.	87,270	30,220	4,960	32,922	4,270	24,654	1,725	12,237	3,906	757	14,449	3,398	5,072	42,971	3,864
Oct.	93,078	31,334	6,140	43,096	3,000	23,955	1,581	10,368	3,025	999	13,311	1,880	4,778	43,123	4,000
Nov.	90,045	35,823	5,778	42,945	3,227	23,127	1,464	9,606	3,080	775	13,166	1,862	4,527	44,013	5,134
Dec.	95,285	35,593	5,446	43,765	4,786	21,756	1,424	9,607	3,207	810	13,038	2,114	4,388	42,459	4,672
Total	1,115,493	360,745	42,905	.....	46,141	255,710	17,265	121,799	37,186	9,298	143,654	27,101	55,633	499,418	47,828
1958															
Jan.	94,735	32,541	5,272	41,578	3,990	23,790	1,554	7,909	3,000	848	12,345	2,091	4,334	42,996	4,255
Feb.	87,130	30,639	4,849	39,648	3,235	21,792	1,340	11,495	3,054	756	10,806	1,509	4,045	36,364	4,708
Mar.	90,336	34,190	5,954	40,205	3,497	25,161	1,549	9,559	6,023	821	10,195	2,580	5,555	44,847	4,731
April	86,123	32,635	6,101	16,115	4,010	23,286	1,463	9,884	3,149	788	8,515	2,942	6,220	41,396	4,413
May	80,628	32,471	6,141	23,264	3,481	24,543	1,636	7,095	2,987	786	9,806	2,574	6,229	41,615	4,488
June	71,092	32,419	5,954	34,811	3,405	23,128	1,674	7,414	3,102	769	10,617	1,810	6,819	44,447	4,018
July	64,444	31,131	5,995	40,495	3,780	24,418	1,610	9,091	3,245	801	10,762	1,136	6,139	44,010	3,324
Aug.	67,917	30,867	6,340	45,211	3,646	26,409	1,855	5,451	2,858	786	11,053	.....	6,220	42,000	4,974
Sept.	79,541	27,546	6,294	40,913	3,637	24,649	1,749	12,027	2,870	792	12,583	.....	.....	17,291	4,749
Oct.	92,214	22,572	5,380	47,230	2,950	27,635	1,618	11,225	3,616	809	13,310	.....	.....	25,812	4,249
Nov.	96,369	20,368	5,040	46,310	3,923	24,932	1,594	8,542	3,462	774	11,764	.....	.....	45,935	.....
Dec.	97,641	19,023	5,066	46,284	3,196	25,569	.....	9,942	.....	832	15,054	.....	.....	42,613	.....
Total	1,881,170	346,816	68,386	462,064	42,750	295,312	.....	106,134	.....	9,062	136,612	.....	.....	426,513	.....
1959															
Jan.	98,356	.....	.....	.....	3,115	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

(a) Reported by Copper Institute. Crude. (b) Recoverable contents of mine production or smelter production or shipments, and custom intake. (c) Does not include intake of scrap nor of imported ore except that received from Cuba and Philippines. (d) Blister copper plus recoverable copper in concentrates, matte, etc., exported. (e) Crude copper, i. e., copper content of blister or converter copper as originally produced in the several countries, although some of it may be refined at home; e. g., in Rhodesia. (f) Blister and/or refined. (g) Refined. There are quantities of scrap included in the electrolytic production in addition to that reported, tonnage of which is not obtainable. (h) Smelter production. (i) Refinery production from imported blister only. (j) British Bureau of Non-Ferrous Metal Statistics. * Refined.

World Production of Refined Lead (American Bureau of Metal Statistics)

	United States	Canada	Mexico	Peru	Belgium	France	Fed. Rep. of Germany	Italy	Spain	Yugoslavia	Japan	Australia (a)	French Morocco	Tunisia	Rhodesia	Total
1955																
Total	547,153	148,811	221,138	67,303	91,241	73,251	162,508	46,806	67,509	83,347	40,912	254,358	28,870	28,620	17,976	1,893,125
1956																
Total	613,293	147,865	218,624	61,917	111,479	73,251	178,713	42,780	64,824	83,507	51,019	256,800	30,993	26,623	17,024	1,984,344
1957																
Sept.	50,436	17,298	20,151	6,553	8,053	7,768	15,908	4,173	5,566	6,356	5,366	24,200	2,463	1,921	1,456	174,013
Oct.	52,041	10,302	18,627	6,323	9,615	7,874	17,643	3,491	5,582	7,409	5,297	19,639	2,733	2,612	1,456	171,334
Nov.	48,771	12,125	19,491	6,374	9,257	8,396	16,703	4,063	4,840	7,373	5,878	24,987	2,806	2,598	1,456	177,739
Dec.	50,500	12,504	19,465	6,951	8,191	7,512	17,215	4,231	5,460	7,846	5,785	24,095	4,173	3,123	1,568	180,412
Total	604,533	142,935	218,266	55,971	.....	94,509	195,136	42,336	61,332	85,313	59,670	261,035	34,441	27,069	12,364	2,052,431
1958																
Jan.	47,665	12,672	20,144	6,188	8,375	7,501	18,017	4,013	5,297	6,042	4,974	25,518	3,323	1,785	1,232	173,922
Feb.	47,133	11,432	18,341	5,308	8,347	7,959	15,939	4,433	5,337	7,452	4,352	23,628	3,326	2,781	1,176	167,791
Mar.	43,441	12,837	18,455	6,899	8,773	7,890	15,548	4,597	6,392	8,600	4,335	26,359	3,375	1,174	1,204	171,654
April	47,487	12,212	21,005	5,421	9,058	8,339	16,327	4,652	6,281	7,021	3,481	19,876	2,338	2,394	1,204	160,946
May	40,984	11,785	21,099	5,626	8,917	8,858	15,144	2,402	6,944	7,482	3,541	25,035	3,532	2,978	1,204	174,255
June	44,636	12,706	17,846	6,255	8,264	7,977	15,194	3,677	6,403	6,469	3,461	22,979	2,906	3,127	1,232	164,278
July	38,827	7,776	18,315	6,880	8,548	8,319	11,229	4,581	6,327	6,872	3,567	21,563	2,767	568	1,232	147,624
Aug.	39,259	6,940	17,991	6,100	7,495	15	15,760	4,584	6,913	5,414	3,610	19,942	2,584	2,756	1,176	140,501
Sept.	43,259	10,908	16,256	5,192	7,849	8,264	15,700	4,367	6,692	6,942	3,587	22,632	2,134	2,369	1,120	158,285
Oct.	45,467	12,598	11,968	5,074	7,940	9,308	17,130	4,639	7,121	9,242	3,522	22,482	3,560	2,410	1,176	163,818
Nov.	40,486	10,645	17,067	6,448	9,495	9,068	17,785	4,825	.....	11,155	3,555	20,148	2,625	2,519	1,120	.....
Dec.	44,042	.....	20,902	5,344	10,342	10,351	18,370	5,101	.....	.....	3,769	.....	4,002	2,779	1,120	.....
Total	575,612	.....	246,443	80,999	119,192	111,337	223,973	60,860	.....	52,915	.....	.....	42,266	32,359	16,492	.....
1959																
Jan.	43,652	.....	19,031	4,951	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

(a) Production credited to Australia includes lead refined in England from Australian base bullion.

World Production of Slab Zinc (American Bureau of Metal Statistics)

	United States (a)	Can. (b)	Mexico (c)	Peru (b-c)	Belgium (b-c)	France (a)	(In Tons of Fed. Great Rep. of Britain Germany)	Italy (b)	Nether-lands (b)	Norway (b)	Spain (b)	Yugo- slavia (a)	Japan (a)	Austra- lia (b)	Rhodes- ia (b)	Total (d)		
1955 Total	1,031,018	257,008	61,879	18,943	233,623	123,623	197,924	90,917	77,761	31,203	49,724	26,244	15,175	122,965	113,221	31,248	2,534,457	
1956 Total	1,062,954	255,601	62,136	10,428	251,906	124,105	204,961	90,784	80,407	32,123	53,170	25,224	15,434	153,821	117,445	32,396	2,630,383	
1957 July	85,779	20,062	5,263	3,078	20,176	12,511	16,615	7,236	7,178	2,629	4,690	2,049	2,753	14,245	12,229	2,856	225,017	
Aug.	84,166	20,305	5,144	3,233	19,301	12,387	16,617	7,272	7,029	2,641	4,378	2,143	2,740	14,008	10,675	2,856	220,368	
Sept.	80,965	20,247	5,090	3,000	20,129	10,631	16,389	7,100	6,954	2,698	4,476	1,911	2,745	13,753	10,300	2,800	211,477	
Oct.	81,490	20,890	5,351	2,892	21,688	12,305	16,800	7,292	6,133	2,781	4,419	2,011	2,011	14,529	10,829	2,856	215,829	
Nov.	79,754	20,933	5,227	3,014	21,660	11,884	16,580	7,036	5,712	2,763	4,399	2,164	2,164	12,905	10,521	2,772	215,395	
Dec.	86,270	21,829	5,441	3,333	22,274	12,413	17,684	7,483	6,596	2,742	4,483	2,789	2,189	13,638	10,895	2,828	230,624	
1958 Total	1,574,500	247,356	62,354	35,772	259,701	148,455	202,627	85,348	81,179	32,786	52,787	24,279	80,256	162,145	123,587	33,040	2,692,833	
1959 Jan.	82,343	21,801	5,561	3,271	22,382	12,795	17,187	7,179	4,911	2,654	4,134	2,209	2,943	13,126	10,816	2,828	221,115	
Feb.	68,254	19,743	4,985	2,669	22,026	12,028	15,562	6,529	5,275	2,659	4,030	1,975	2,797	12,072	9,642	2,576	199,114	
Mar.	72,274	22,314	5,620	2,782	21,453	13,786	16,743	7,584	6,549	2,709	3,851	2,045	3,013	13,217	10,707	2,856	214,045	
April	70,214	20,989	5,289	2,597	20,886	14,985	15,693	8,018	6,925	2,586	3,850	2,207	2,853	9,305	10,424	2,772	204,686	
May	71,018	21,269	5,254	2,699	20,949	15,279	16,128	6,343	7,202	2,442	3,962	2,372	2,871	13,504	10,918	2,856	211,529	
June	66,967	20,354	5,016	2,429	20,094	14,243	15,663	7,202	7,331	2,221	3,307	2,309	2,854	14,040	10,988	2,744	204,067	
July	65,119	20,878	5,285	2,520	19,556	14,295	16,210	7,140	5,879	2,471	3,815	2,296	2,928	15,835	10,742	2,884	203,826	
Aug.	62,297	21,152	5,216	2,822	18,308	14,253	16,204	6,689	5,991	2,533	3,793	2,259	2,820	12,420	11,075	2,912	199,145	
Sept.	63,700	20,531	5,025	2,640	17,961	12,232	15,635	6,887	5,991	2,533	3,793	2,259	2,820	12,420	11,075	2,912	199,145	
Oct.	65,304	21,125	5,344	2,305	17,866	14,176	16,462	6,046	6,442	2,280	4,915	2,313	2,793	14,436	11,045	2,940	204,067	
Nov.	65,174	20,274	5,197	2,625	18,696	13,274	16,196	6,168	5,874	2,249	4,669	.....	3,370	13,601	10,508	2,828	204,067
Dec.	75,503	21,705	5,537	2,686	19,402	13,844	17,990	6,344	5,654	.....	4,755	.....	.....	12,473	.....	2,856	204,067
1959 Total	892,607	254,661	18,354	34,685	257,540	177,422	210,408	80,494	5,955	.....	54,423	.....	.....	166,883	.....	39,508	2,692,833
1960 Jan.	76,491	21,456	5,476	2,753	5,955	4,826	2,800	2,692,833

U. K. Virgin Copper Stocks

(In long tons)
(British Bureau of Non-Ferrous Metal Statistics)

At start of:	1957	1958	1959
Jan.	59,614	91,477	64,184
Feb.	59,203	82,483	65,941
Mar.	62,120	89,147	....
Apr.	61,779	94,330	....
May	71,101	88,582	....
June	61,991	88,913	....
July	64,121	81,851	....
Aug.	81,146	84,756	....
Sept.	98,595	89,899	....
Oct.	100,815	85,092	....
Nov.	90,877	74,686	....
Dec.	81,657	69,023	....

U. K. Refined Lead Stocks

(British Bureau of Non-Ferrous Metal Statistics)

At start of:	1957	1958	1959
Jan.	39,420	51,295	45,444
Feb.	41,433	49,134	48,102
Mar.	36,900	47,738	....
Apr.	34,877	40,547	....
May	44,933	37,509	....
June	40,804	34,608	....
July	42,148	40,518	....
Aug.	48,275	37,148	....
Sept.	51,435	43,758	....
Oct.	45,301	48,856	....
Nov.	50,371	40,216	....
Dec.	48,065	35,335	....

U. K. Stocks of Zinc

(British Bureau of Non-Ferrous Metal Statistics)

(In tons of 2,240 lbs.)				
		Virgin Zinc	Zinc Conc.	
At start of:	1958	1959	1958	1959
Jan.	44,926	37,094	79,349	56,371
Feb.	43,308	37,333	82,125	58,518
Mar.	46,662	.....	87,721	.....
Apr.	46,608	.....	84,631	.....
May	47,251	.....	80,964	.....
June	50,539	.....	74,470	.....
July	49,613	.....	71,553	.....
Aug.	48,497	.....	70,105	.....
Sept.	45,590	.....	63,909	.....
Oct.	45,784	.....	57,376	.....
Nov.	39,341	.....	53,371	.....
Dec.	35,396	.....	58,022	.....

U. K. Copper Exports

(British Bureau of Non-Ferrous Metal Statistics)

(In tons of 2,240 lbs.)	1958		1959
	Nov.	Dec.	Jan.
(Gross Weight)			
Copper unwrought			
— ingots, blocks,			
slabs, bars, etc.	6,600	3,786	7,835
Plates, sheets,			
rods, etc.	7,735	4,759	3,953
Wire (including			
insulated elec-			
tric wire)	6,402	3,261	3,033
Tubes	1,445	1,249	1,162
Other copper,			
worked (includ-			
ing pipe fit-			
tings)	120	97	95
Total	22,302	13,152	16,078

METALS, MARCH, 1959

Copper Consumption in United Kingdom

British Bureau of Non-Ferrous Metal Statistics
(In tons of 2,240 pounds)

	Unalloyed	Alloyed*	Total	Virgin	Scrap
1956 Total	388,167	251,312	639,479	500,794	138,685
1957					
October	38,044	22,004	60,048	49,638	10,410
November	35,102	20,506	55,608	44,144	11,464
December	30,043	18,591	48,634	38,104	10,530
Total	407,326	234,158	641,484	507,493	133,991
1958					
January	35,799	20,816	56,615	46,437	10,178
February	32,207	19,352	51,559	37,907	13,652
March	33,491	19,580	53,071	41,539	11,532
April	36,722	19,100	55,822	43,784	12,038
May	35,810	18,423	54,233	43,571	10,662
June	39,277	18,141	57,418	46,080	11,338
July	36,743	17,091	53,834	42,373	11,461
August	28,416	13,756	42,172	33,073	9,100
September	42,813	18,596	61,409	52,018	9,390
October	43,402	21,788	65,190	53,937	11,253
November	40,987	19,232	60,219	47,932	12,287
December	37,580	19,118	56,698	45,968	10,730
Total	442,977	225,001	667,978	534,619	133,359
1959					
January	32,678	21,217	53,895	39,815	14,080

* Includes copper sulphate effective October, 1954.

U. K. Zinc Imports

(British Bureau of Non-Ferrous Metal Statistics)

(In tons of 2,240 lbs.)	—1958—		1959
	Nov.	Dec.	Jan.
(Gross Weight)			
Zinc ore and			
conc.	26,969	7,099	27,979
Zinc conc.	11,046	6,610	....
Australia	6,221	5,728	....
Canada	4,242	....	....
Burma	583	882	....
Zinc and zinc			
alloys:			
(Gross Wt.) ..	9,440	13,752	15,083
Rhodesia-Ny-			
asaland	125	150	200
Australia	500	950	....
Canada	4,056	8,462	6,938
Belgium	1,703	1,334	2,180
Germany (W.)	2	3	500
Netherlands ..	200	601	1,305
Soviet Union..	1,655	960	1,611
United States.	7	....	26
Belgian Congo ....	....	500	525
Other countries	1,192	792	1,798

Zinc Imports and Exports By Principal Countries

(A. B. M. S.)

Reported in ingots, slabs, etc.; metric tons except where otherwise noted.

IMPORTS			
	Aug.	1958 Sept.	Oct.
U. S. (s.t.)	16,871	20,897	...
Canada (s.t.)	63	...	...
Denmark	1,346	627	1,979
France	934	1,533	2,181
Italy	275	...	...
Netherlands	1,005	1,329	1,080
Sweden	2,778	1,530	...
Switzerland†	1,558	466	1,133
U. K. (l.t.)	9,572	8,796	10,322
India* (l.t.)	4,187	2,720	4,536
EXPORTS			
U. S. (s.t.)	16	10	...
Canada (s.t.)	15,906	8,670	22,810
Denmark	449	276	369
France	52	...	5
Italy	504	...	...
Netherlands	392	479	674
Norway	1,765	3,573	...
Switzerland†	361	852	244
U. K.‡ (l.t.)	574	744	669
Northern			
Rhodesia* (l.t.)	2,376	2,006	...

† Includes scrap.
‡ Includes manufactures.
* British Bureau of Non-Ferrous Metal Statistics.

† Includes scrap.

‡ Includes manufactures.

* British Bureau of Non-Ferrous Metal Statistics.

United Kingdom Tin Statistics

(British Bureau of Non-Ferrous Metal Statistics)

	Imports	Production*	Stock at end of period*	Imports	Production*	Consumption	Exports & Re-exports	Stock at end of period
1957 Total	39,272	1,028	....	9,834	34,175	20,365	7,362	71,931
1958								
February	3,243	86	3,446	2,495	2,746	1,567	310	20,322
March	2,350	89	3,261	1,018	3,106	1,566	1,408	20,940
April	2,678	82	4,407	582	1,790	1,725	924	20,069
May	2,707	101	3,872	1,428	3,400	1,583	....	21,529
June	1,815	104	2,431	1,029	2,964	1,719	912	21,715
July	2,007	107	2,020	329	2,904	1,656	478	20,880
August	2,235	44	2,063	1,525	2,423	1,412	912	19,676
September	1,743	99	1,564	1,141	2,579	1,784	988	19,942
October	1,913	91	1,419	145	2,488	2,072	882	20,135
November	1,971	96	1,770	851	2,187	1,795	594	19,285
December	2,757	....	....	317	2,350	1,802	1,770	19,054
1958 Total	27,419	....	....	13,195	32,551	20,413	20,398	19,054

* As reported by International Tin Study Group. Production of Tin Metal includes production from imported scrap and residues refined on toll. Stocks exclude strategic stock but include official warehouse stocks.

Canada's Copper Output

(Dominion Bureau of Statistics)

(Refined Copper)				
(In Tons)				
1955	1956	1957	1958	
Jan. ..22,600	26,653	25,469	32,868	
Feb. ..21,455	26,229	21,861	28,668	
Mar. ..25,083	26,750	27,663	29,239	
Apr. ..24,077	26,617	27,398	30,635	
May ..23,840	27,626	29,086	32,471	
June ..21,890	27,123	24,093	32,418	
July ..21,185	27,250	27,195	31,131	
Aug. ..26,184	29,219	26,943	30,867	
Sept. ..24,752	27,950	24,633	27,546	
Oct. ..25,546	29,696	30,312	22,572	
Nov. ..25,213	27,346	27,331	20,368	
Dec. ..27,172	28,716	31,604	19,033	
Year	288,987	331,174	323,588	346,816

Canada's Lead Exports

(Dominion Bureau of Statistics)

(In Pigs)				
(In Tons)				
1955	1956	1957	1958	
Jan. .. 5,500	4,888	8,946	4,752	
Feb. ..11,882	3,856	6,633	1,553	
Mar. ..10,318	4,007	7,044	9,497	
Apr. ..11,967	7,636	7,314	7,450	
May .. 6,416	7,214	9,676	7,764	
June .. 9,897	6,632	7,210	4,036	
July .. 8,341	9,696	4,682	12,629	
Aug. .. 4,884	4,713	6,416	7,232	
Sept. .. 5,538	9,908	8,467	5,125	
Oct. .. 8,053	9,072	7,761	10,320	
Nov. .. 4,622	9,227	6,175	10,641	
Dec. .. 5,286	2,734	4,217	11,352	
Year	92,407	79,633	84,541	92,351

Canada's Silver Exports

(Dominion Bureau of Statistics)

(In ores and concentrates)			
(Fine Ounces)			
1956	1957	1958	
Jan. 435,047	253,940	634,715	
Feb. 196,803	380,463	208,149	
Mar. 328,857	521,849	350,827	
Apr. 348,838	431,646	284,971	
May 447,710	523,228	376,082	
June 495,742	468,559	438,253	
July 686,209	844,545	529,770	
Aug. 1,080,301	811,530	279,511	
Sept. 481,042	861,857	583,570	
Oct. 731,099	432,000	323,475	
Nov. 669,285	263,273	217,892	
Dec. 1,023,481	186,569	871,573	
Year	6,924,414	5,979,459	5,098,788

Canada's Copper Exports

(Dominion Bureau of Statistics)

(Ingots, bars, slabs and billets)				
(In Tons)				
1955	1956	1957	1958	
Jan. ..11,078	15,981	20,582	26,883	
Feb. ..12,897	11,041	16,272	16,816	
Mar. ..12,423	12,276	14,720	18,662	
Apr. ..10,321	14,476	16,417	23,261	
May ..10,911	12,851	19,048	19,358	
June ..13,387	10,985	10,826	20,831	
July ..12,674	13,599	18,621	21,703	
Aug. ..13,219	14,710	21,980	15,881	
Sept. ..13,479	17,268	14,314	15,373	
Oct. ..14,208	13,896	13,110	20,341	
Nov. ..14,545	19,130	16,622	14,391	
Dec. ..14,057	18,630	16,282	11,138	
Year	153,199	174,843	198,794	224,638

Canada's Zinc Output

(Dominion Bureau of Statistics)

(Refined Zinc)				
(In Tons)				
1955	1956	1957	1958	
Jan. ..22,028	21,696	20,340	21,801	
Feb. ..19,865	20,356	19,808	19,743	
Mar. ..22,215	22,010	21,941	22,314	
Apr. ..21,301	21,339	20,504	20,989	
May ..21,599	21,790	20,564	21,269	
June ..20,565	20,780	19,928	20,353	
July ..21,769	21,691	20,061	20,873	
Aug. ..22,029	21,354	20,305	21,152	
Sept. ..20,898	20,691	20,247	20,530	
Oct. ..22,206	21,412	20,892	21,125	
Nov. ..21,398	20,470	20,933	20,273	
Dec. ..21,135	22,012	21,828	21,705	
Year	257,008	255,607	247,351	252,157

Canada's Silver Output

(Dominion Bureau of Statistics)

(In Ounces)			
1956	1957	1958	
Jan. 2,280,575	2,158,631	2,529,583	
Feb. 2,094,467	2,051,679	2,294,655	
Mar. 2,296,648	2,346,316	2,448,698	
Apr. 1,759,384	2,225,638	2,558,958	
May 2,463,374	2,111,185	2,650,665	
June 2,494,748	2,208,584	2,527,632	
July 2,267,271	2,383,390	2,385,687	
Aug. 2,315,312	2,592,468	2,884,154	
Sept. 2,517,451	2,382,121	2,856,304	
Oct. 2,379,162	2,817,358	2,390,027	
Nov. 2,494,547	2,566,519	2,643,790	
Dec. 2,357,202	2,537,984	2,917,528	
Year	27,655,141	28,361,873	31,087,681

Canada's Lead Output

(Dominion Bureau of Statistics)

(Recoverable Lead)*				
(In Tons)				
1955	1956	1957	1958	
Jan. ..18,959	16,002	14,032	17,117	
Feb. ..15,018	14,344	15,170	14,908	
Mar. ..19,113	16,857	16,940	15,421	
Apr. ..17,889	11,573	14,275	15,644	
May ..16,808	15,446	14,591	15,131	
June ..17,800	18,145	16,431	15,645	
July ..16,650	15,841	14,377	14,076	
Aug. ..16,676	16,104	14,679	12,260	
Sept. ..15,972	15,760	15,869	15,401	
Oct. ..13,658	16,725	14,151	14,564	
Nov. ..15,182	14,865	15,879	16,680	
Dec. ..17,857	16,056	15,296	18,248	
Year	201,583	188,971	181,690	185,095

* New base bullion from Canadian ores plus recoverable lead in ores or concentrates shipped for export.

Canada's Zinc Exports

(Dominion Bureau of Statistics)

(Slabs in Tons)				
1955	1956	1957	1958	
Jan. ..22,181	15,550	19,304	17,349	
Feb. ..25,556	11,757	16,618	8,376	
Mar. ..20,178	8,822	14,923	19,636	
Apr. ..21,018	14,317	17,131	16,346	
May ..14,820	11,357	16,680	15,122	
June ..19,581	15,296	16,157	7,776	
July ..13,522	15,499	12,912	27,394	
Aug. ..16,581	13,070	20,520	15,906	
Sept. ..11,793	19,732	17,671	8,670	
Oct. ..19,836	20,792	16,735	22,810	
Nov. ..14,164	21,411	17,225	17,978	
Dec. ..14,607	16,125	16,131	18,344	
Year	213,837	183,728	202,007	195,707

Canada's Nickel Output

(Dominion Bureau of Statistics)

(In Tons)				
1955	1956	1957	1958	
Jan. ..14,387	14,985	16,609	16,710	
Feb. ..13,375	14,997	15,027	15,896	
Mar. ..15,544	15,504	16,733	15,853	
Apr. ..15,011	14,431	15,347	15,163	
May ..15,352	15,203	16,225	15,231	
June ..14,835	14,492	15,447	14,603	
July ..14,530	15,125	15,878	12,851	
Aug. ..14,825	14,852	16,756	12,597	
Sept. ..13,734	14,530	15,604	11,786	
Oct. ..14,411	15,762	15,628	3,682	
Nov. ..14,290	15,062	14,587	3,178	
Dec. ..14,881	14,824	15,096	3,298	
Year	175,173	178,767	188,962	140,848

METALS, MARCH, 1959

Canadian Copper Exports

(Dominion Bureau of Statistics)

	(In tons of 2,000 lbs.)		
	1958	1958	1959
	Oct.	Nov.	Dec.
Ore, matte, regulus, etc. (content)	3,821	1,051	2,791
United States	97	437	1,402
Belgium . . . . .	...	...	157
Germany (W.)	33	...	74
Norway	1,348	614	1,130
United Kingdom	135	...	28
Japan	2,208	...	...
Ingots, bars, billets, anodes	20,340	14,391	11,138
United States	4,977	4,287	2,696
Brazil	133	...	...
Belgium . . . . .	...	280	...
France	2,144	840	364
Germany (W.)	1,091	392	560
Italy	543	140	252
Netherlands	28	252	168
Sweden	56	...	...
Switzerland	84	308	...
United Kingdom	9,982	5,934	6,298
India	1,214	1,901	800
Other countries	88	57	...
Total Exports:			
Crude & refined	24,161	15,442	13,929
Old and scrap	466	997	992
Rods, strips, sheet & tubing	1,647	1,328	2,694

Canadian Zinc Exports

(Dominion Bureau of Statistics)

	(In tons of 2,000 lbs.)		
	1958	1958	1959
	Oct.	Nov.	Dec.
Ore (zinc content)	10,738	11,982	28,544
United States	10,738	11,982	16,350
Belgium . . . . .	...	...	1,856
Germany (W.) . . . . .	...	...	409
Netherlands . . . . .	...	...	546
Norway . . . . .	...	...	4,616
United Kingdom . . . . .	...	...	4,767
Slab zinc	22,810	17,978	18,344
United States	14,425	5,114	7,336
Brazil	554	540	192
Chile	22	66	110
Germany (W.)	812	140	84
Netherlands	224	112	672
United Kingdom	6,548	10,507	9,950
Korea	142	...	...
Taiwan	33	134	...
India . . . . .	...	560	...
Pakistan	29	784	...
Other countries	21	21	...
Total Exports:			
Ore and slabs	33,548	29,960	46,888
Zinc scrap, dross, ashes	509	773	461
United States	73	8	47
Belgium	295	530	252
Netherlands . . . . .	...	228	113
Japan	141	7	49

Canada's Nickel Exports

(Dominion Bureau of Statistics)			
(Refined, in oxides, matte, etc.)			
(In Tons)			
	1958	1957	1958
January	15,121	14,260	14,238
February	13,940	9,974	12,157
March	16,219	14,958	12,316
April	14,448	18,671	20,962
May	14,729	18,351	20,674
June	16,403	14,539	16,144
July	11,079	14,181	14,055
August	18,470	14,966	13,012
September	13,849	14,160	14,371
October	12,800	13,370	8,335
November	14,084	16,620	3,001
December	15,694	14,606	5,060
Year	176,836	178,656	154,220

METALS, MARCH, 1959

Canadian Lead Exports

(Dominion Bureau of Statistics)

	(In tons of 2,000 lbs.)		
	1958	1958	1959
	Oct.	Nov.	Dec.
Ore (lead content)	4,092	1,509	9,013
United States	3,266	1,509	3,207
Belgium . . . . .	...	...	3,521
Germany (W.)	826	...	1,667
United Kingdom . . . . .	...	...	618
Refined lead	10,320	10,641	11,352
United States	6,429	1,101	2,868
Brazil	82	...	...
United Kingdom	3,724	9,140	8,406
Japan	33	...	...
Taiwan	51	146	...
Other countries	1	254	78
Total Exports:			
Ore and refined	14,412	12,150	20,365
Pipe and tubing . . . . .	...	1	1
Lead scrap	40	43	...

Copper Imports and Exports By Principal Countries

(A. B. M. S.)

Reported in ingots, slabs, etc.; metric tons except where otherwise noted.

	IMPORTS		
	1958	1958	1959
	Oct.	Nov.	Dec.
U. S. (blis., s.t.)	19,538	23,672	...
(ore, etc., s.t.)	5,051	12,382	...
(ref., s.t.)	2,940	11,120	...
Denmark	607	629	101
France (crude)	813	...	813
(refined)	16,168	18,556	14,207
Italy	9,934	...	...
Germany, West.	32,037	24,407	...
Netherlands	2,901	2,246	2,355
Norway	152	...	...
Sweden	4,481	4,795	...
Switzerland	2,090	2,174	2,833
U. K. (l.t.)	41,289	32,958	38,200
India (blister/- ref., l.t.)*	3,642	2,464	1,923
Australia (blister & ref'd, l.t.)*	100	...	...
EXPORTS			
U. S. (ore and unref., s.t.)	1,123	307	...
(refined, s.t.)	43,141	44,498	...
Canada (refined, s.t.)	20,340	14,391	11,138
Finland†	276	1,337	...
Germany, West.	6,004	5,159	...
Norway	1,258	...	...
Sweden	856	998	...
U. K.	6,468	6,600	3,786
No. Rhodesia (blister & ref'd l.t.)*	17,909	2,140	34,686

† Includes old.

* British Bureau of Non-Ferrous Metal Statistics.

French Copper Imports

(A. B. M. S.)			
((In metric tons))			
	1958	1958	1959
	Nov.	Dec.	Jan.
Crude copper for refining (blister, black and cement) . . . . .	...	813	...
Belgian Congo . . . . .	...	813	...
Refined	18,556	14,207	17,451
United States	7,822	6,884	8,819
Canada	782	610	254
Chile	17	...	...
Belgium	3,539	4,144	4,218
Germany (W.)	107	166	357
Norway . . . . .	...	203	203
Sweden	22	...	...
United Kingdom	89	10	250
Belgian Congo	2,994	2,031	2,410
Rhodesia-Nyasaland	3,184	159	940

French Zinc Imports

(A. B. M. S.)			
((In metric tons))			
	1958	1958	1959
	Nov.	Dec.	Jan.
Ore (gross weight)	44,127	25,760	16,621
Bolivia	4,041	...	...
Peru	1,444	...	...
Belgium . . . . .	...	...	524
Finland	4,000	...	...
Greece . . . . .	...	3,870	545
Italy	5,977	...	3,935
Norway . . . . .	...	353	...
Spain	3,007	1,902	795
Yugoslavia	1,600	7,420	...
Algeria	8,670	1,430	3,038
Morocco	11,948	6,901	7,784
Belgian Congo	2,190	3,884	...
Australia	1,250	...	...
Slabs, bars, blocks, etc.	985	1,425	1,717
Belgium	882	1,208	1,165
Germany (W.)	15	100	100
Italy	76	117	152
Norway . . . . .	...	...	6
Algeria	12	...	14
Netherlands . . . . .	...	...	280

French Metal Exports

(A. B. M. S.)			
((In metric tons))			
	1958	1958	1959
	Nov.	Dec.	Jan.
Ore (g. wt.)	12	33	668
Pig lead	2,207	2,268	2,310
United States	250	...	...
Uruguay . . . . .	...	297	25
Denmark	203	406	...
Germany (W.)	465	775	260
Switzerland	775	760	755
United Kingdom	406	...	1,270
Other countries	108	30	...
Antimonial lead	380	279	327
ZINC			
Slabs, bars, blocks, etc.	82	1	50

U. K. Copper Imports

(British Bureau of Non-Ferrous Metal Statistics)			
(In tons of 2,240 lbs.)			
	1958	1958	1959
	Nov.	Dec.	Jan.
(Gross Weight)			
Copper and copper alloys	32,958	38,200	39,960
U. of S. Africa	250	501	725
Rhodesia-Nyasaland	8,692	2,939	19,337
Canada	4,448	1,982	3,874
Belgium	204	335	9
Germany (W.)	20	42	44
Norway	50	275	226
United States	11,082	17,022	8,709
Chile	7,900	7,800	6,044
Peru . . . . .	...	...	150
Belgian Congo	250	750	800
Other countries	62	534	42
Of which:			
Electrolytic	19,771	29,645	30,254
Other refined	4,274	4,400	2,625
Blister or rough	8,645	2,501	6,959
Wrought and alloys	268	1,654	122
Total	32,958	38,200	39,960

Nonferrous Castings

MONTHLY SHIPMENTS, BY TYPE OF METAL (Bureau of Census — Thousands of Pounds)

	Aluminum	Copper	Magnesium	Zinc	Lead
1953 Total	658,022	990,496	34,517	521,253	20,444
1954 Total	607,764	834,557	25,572	474,741	18,396
1955 Total	833,058	1,011,748	27,892	781,254	21,045
1956 Total	801,136	966,473	36,168	88,069	20,734
1957					
July	52,173	60,621	2,544	46,379	2,079
Aug.	55,735	71,233	2,315	49,829	2,165
Sept.	58,692	70,804	2,279	47,736	2,115
Oct.	64,140	81,836	2,192	62,332	2,481
Nov.	58,898	70,187	1,920	58,689	1,590
Dec.	53,102	65,708	1,533	49,597	1,399
Total	751,856	875,389	30,322	663,330	23,791
1958					
January	57,845	69,707	1,881	50,658	1,566
February	50,695	58,356	1,803	42,687	1,294
March	50,547	60,157	1,975	39,719	1,630
April	44,948	59,311	2,215	35,796	1,467
May	44,093	57,506	2,422	36,447	1,655
June	40,701	57,124	2,205	38,132	1,971
July	38,818	51,124	2,200	32,765	1,394
August	45,034	57,790	1,869	35,660	1,804
September	52,796	64,447	2,804	47,127	1,725
October	55,699	74,012	2,627	45,045	1,708
November	55,793	62,476	2,615	48,431	1,409
December	59,487	67,905	2,612	55,600	1,497

Spot Straits Tin

(Straits, Open Market, N. Y.)

	Monthly Average Prices			
	1956	1957	1958	1959
Jan.	105.036	101.511	92.94	99.411
Feb.	100.803	101.132	93.915	102.785
Mar.	100.786	99.643	94.452	....
Apr.	99.268	99.304	92.988	....
May	96.994	98.347	94.512	....
June	94.589	98.05	94.708	....
July	96.143	96.52	94.892	....
Aug.	99.049	94.261	94.988	....
Sept.	103.809	93.406	94.101	....
Oct.	106.023	91.838	96.523	....
Nov.	110.921	89.236	99.118	....
Dec.	104.268	92.35	98.989	....
Aver.	101.475	96.301	95.177	....

Copper Castings Shipments

BY TYPE OF CASTING

(Bureau of Census)

(Thousands of Pounds)

	Total	Sand	Permanent	Mold	Die	All Other
1951 Total	1,197,443	1,075,437	69,883	12,516	39,607	26,924
1952 Total	1,009,910	910,862	63,665	8,259	26,924	30,734
1953 Total	990,496	888,369	61,316	10,077	27,394	31,408
1954 Total	834,557	751,804	48,849	6,480	27,394	32,134
1955 Total	1,011,748	907,852	63,041	8,541	31,408	32,134
1956 Total	966,113	866,404	57,522	10,023	32,134	32,134
1957						
July	60,621	54,847	3,010	825	1,939	2,203
Aug.	71,233	64,953	3,278	799	2,203	2,221
Sept.	70,804	64,470	3,243	870	2,221	2,695
Oct.	81,836	74,391	3,693	1,057	2,695	2,375
Nov.	70,187	63,944	3,006	862	2,375	2,168
Dec.	65,708	59,606	3,046	888	2,168	30,048
Total	875,389	789,819	44,746	10,776	30,048	30,048
1958						
January	69,707	63,294	3,327	894	2,192	1,779
February	58,356	52,579	3,202	796	1,779	1,932
March	60,157	54,007	3,395	823	1,932	1,705
April	59,311	53,271	3,385	949	1,705	1,904
May	57,506	51,634	3,077	891	1,904	1,317
June	57,124	51,967	3,001	839	1,317	1,345
July	51,124	46,636	2,351	792	1,345	1,702
August	57,590	52,981	2,425	682	1,702	2,248
September	64,447	58,435	2,888	876	2,248	2,419
October	74,012	67,564	3,239	790	2,419	1,946
November	62,746	57,386	2,604	810	1,946	2,192
December	67,905	61,119	3,535	1,059	2,192	2,192

Nickel Averages

Electro, cathode sheets, 99.00%,
f.o.b. refinery, duty included
(Cents per pound)

	1956	1957	1958	1959
Jan.	64.50	74.00	74.00	74.00
Feb.	64.50	74.00	74.00	74.00
Mar.	64.50	74.00	74.00	....
Apr.	64.50	74.00	74.00	....
May	64.50	74.00	74.00	....
June	64.50	74.00	74.00	....
July	64.50	74.00	74.00	....
Aug.	64.50	74.00	74.00	....
Sept.	64.50	74.00	74.00	....
Oct.	64.50	74.00	74.00	....
Nov.	64.50	74.00	74.00	....
Dec.	72.48	74.00	74.00	....
Aver.	65.165	74.00	74.00	....

Platinum Averages

N. Y. MONTHLY QUOTATIONS
(Dollars per Troy Ounce)

	1956	1957	1958	1959
Jan.	106.30	101.92	77.85	52.57
Feb.	104.34	98.59	74.32	59.25
Mar.	104.23	93.50	72.096	....
Apr.	103.92	93.45	70.72	....
May	105.23	92.865	67.34	....
June	106.50	92.02	68.18	....
July	106.50	90.265	64.35	....
Aug.	105.76	84.426	60.94	....
Sept.	105.50	84.00	59.60	....
Oct.	104.85	84.00	57.327	....
Nov.	104.50	83.80	56.41	....
Dec.	104.50	78.70	53.154	....
Aver.	105.18	89.79	65.07	....

Prompt Tin Prices

(Straits, Open Market, N. Y.)

	Monthly Average Prices (Cents per Pound)			
	1956	1957	1958	1959
Jan.	104.768	101.347	92.653	99.351
Feb.	100.586	100.257	93.763	102.708
Mar.	100.524	99.476	94.363	....
Apr.	99.145	99.286	92.988	....
May	96.853	98.335	94.512	....
June	94.488	98.025	94.619	....
July	96.131	96.44	94.892	....
Aug.	98.924	94.159	94.976	....
Sept.	103.559	93.313	94.054	....
Oct.	105.716	91.848	96.455	....
Nov.	110.329	89.236	98.985	....
Dec.	104.00	92.34	98.96	....
Aver.	101.252	93.672	95.069	....

Quicksilver Averages

N. Y. Monthly Averages

Virgin, Dollars per 76-lb Flask

	1956	1957	1958	1959
Jan.	277.80	256.00	224.35	219.50
Feb.	270.29	256.00	229.39	219.50
Mar.	261.40	256.00	232.096	....
Apr.	267.22	256.00	233.06	....
May	267.675	256.00	229.48	....
June	260.69	256.00	229.00	....
July	256.06	256.00	230.25	....
Aug.	256.00	252.20	240.27	....
Sept.	256.00	248.58	241.12	....
Oct.	255.92	234.48	235.94	....
Nov.	255.13	228.33	230.05	....
Dec.	256.00	226.50	223.54	....
Aver.	261.71	248.51	230.96	....

METALS, MARCH, 1959

Primary Aluminum Output, Shipments and Stocks

(U. S. Department of Interior)					
	Stocks beginning of month short tons	Production short tons	Sold or Used Short tons	Value f. o. b. plant	Stocks end of month short tons
1957					
October	175,085	133,759	125,430	67,292,495	183,414
November	183,414	135,024	146,333	78,858,676	172,105
December	172,105	140,036	140,996	70,850,564	171,145
Total	.....	1,647,714	1,579,035	.....	.....
1958					
January	171,142	139,910	134,983	\$69,837,103	176,069
February	176,069	121,980	118,608	61,426,895	179,441
March	179,441	134,019	123,461	63,341,320	189,999
April	189,999	124,999	127,608	63,222,858	187,390
May	187,390	126,357	130,160	62,816,641	183,557
June	183,557	115,326	130,787	63,091,679	168,096
July	168,096	118,541	134,083	64,726,335	152,554
August	152,554	125,416	132,765	64,611,494	145,205
September	145,205	124,714	146,870	71,641,275	125,049
October	124,274	139,836	139,908	68,881,146	124,202
November	124,202	140,962	126,619	62,133,129	138,545

Aluminum Wrought Products

PRODUCERS' MONTHLY NET SHIPMENTS
(Bureau of Census — Thousands of Pounds)

	Total	Plate, Sheet, & Strip	Rolled Structural Shapes, Rod, Bar & Wire	Extruded Shapes Tubing & Blooms	Powder, Flake, & Paste
1954 Total	2,088,439	1,165,090	357,229	518,070	46,255
1955 Total	2,805,500	1,542,368	365,391	812,311	35,854
1956 Total	2,870,101	1,577,601	398,602	782,398	28,017
1957					
June	227,388	117,103	32,847	69,411	2,630
July	249,047	130,624	39,342	71,339	3,120
August	223,786	117,796	30,918	66,829	3,224
September	215,564	122,787	21,735	63,421	2,802
October	230,913	121,654	23,075	69,554	2,104
November	186,974	114,618	31,501	64,197	1,716
December	177,520	96,078	21,363	54,672	1,480
Total	2,677,423	1,396,502	399,040	789,430	28,187
1958					
January	193,678	108,616	21,915	57,188	1,538
February	207,459	118,835	21,983	58,296	1,927
March	190,092	108,913	20,692	55,973	1,533
April	210,477	118,793	22,178	62,737	1,954
May	217,299	115,660	27,361	67,376	2,389
June	228,587	118,767	28,674	74,580	2,248
July	229,654	126,160	24,678	72,194	2,642
August	213,548	115,376	23,581	67,953	3,154
September	231,168	125,937	23,287	75,269	2,665
October	254,023	128,967	24,442	85,038	2,163
November	216,249	121,190	17,771	71,666	1,723

Aluminum Castings Shipments

(Bureau of Census)
BY TYPE OF CASTING
(Thousands of Pounds)

	Total	Sand	Permanent Mold	Die	All Other
1954 Total	609,066	155,738	213,968	232,726	6,800
1955 Total	833,058	171,757	298,115	354,804	8,282
1956 Total	801,036	171,763	245,421	376,108	7,736
1957					
July	52,173	10,447	16,322	25,339	...
August	55,735	10,966	18,398	26,319	...
September	58,692	11,367	17,820	24,900	...
October	64,140	11,570	20,543	31,936	...
November	58,898	10,411	18,611	29,793	...
December	53,102	9,302	16,724	26,978	...
1957 Total	751,656	144,121	232,326	369,086	...
1958					
January	57,845	10,724	18,082	28,937	...
February	50,695	9,601	15,456	25,579	...
March	50,547	9,311	15,255	25,918	...
April	44,948	9,531	13,369	21,956	...
May	44,093	9,312	13,648	21,091	...
June	40,701	8,644	13,679	18,292	...
July	38,818	8,658	12,342	17,714	...
August	45,034	9,034	14,426	21,505	...
September	52,796	10,261	16,241	26,254	...
October	55,699	10,932	17,189	27,511	...
November	55,793	10,539	16,942	28,264	...
December	59,487	10,874	18,970	29,579	...

METALS, MARCH, 1959

Virgin Aluminum

Ingot (30 lb.) 99½% Plus, Delivered

Monthly Average Prices (Cents per pound)				
	1956	1957	1958	1959
Jan.	24.40	27.10	28.10	26.80
Feb.	24.40	27.10	28.10	26.80
Mar.	24.60	27.10	28.10	...
Apr.	25.90	27.10	26.10	...
May	25.90	27.10	26.10	...
June	25.90	27.10	26.10	...
July	25.90	27.10	26.10	...
Aug.	26.70	28.10	26.77	...
Sept.	27.10	28.10	26.80	...
Oct.	27.10	28.10	26.80	...
Nov.	27.10	28.10	26.80	...
Dec.	27.10	28.10	26.80	...
Aver.	26.008	27.517	26.889	...

Magnesium Wrought Products Shipments

(Bureau of Census)

(Thousands of Pounds)

	1955	1956	1957	1958
Jan. . .	1,776	2,188	2,130	1,271
Feb. . .	1,648	1,901	2,522	2,522
Mar. . .	1,947	1,946	2,388	1,398
Apr. . .	1,756	2,279	2,511	1,479
May . .	1,836	2,462	2,230	1,443
June . .	1,686	2,302	1,881	1,709
July . .	1,437	2,002	1,428	1,227
Aug. . .	1,742	2,523	1,540	1,823
Sept. .	2,159	2,031	1,501	1,807
Oct. . .	1,667	861	1,453	...
Nov. . .	1,954	2,141	1,230	...
Dec. . .	1,577	2,452	1,102	...
Total	21,186	24,975	21,915	...

Cadmium Averages

N. Y. Monthly Averages
Cents per lb. in ton lots

	1956	1957	1958	1959
Jan.	170.00	170.00	155.00	145.00
Feb.	170.00	170.00	155.00	145.00
Mar.	170.00	170.00	155.00	...
Apr.	170.00	170.00	155.00	...
May	170.00	170.00	155.00	...
June	170.00	170.00	155.00	...
July	170.00	170.00	155.00	...
Aug.	170.00	170.00	155.00	...
Sept.	170.00	170.00	152.60	...
Oct.	170.00	170.00	145.00	...
Nov.	170.00	170.00	145.00	...
Dec.	170.00	166.40	145.00	...
Aver.	170.00	169.70	152.30	...

Steel Ingot Production

(American Iron and Steel Institute)

Period	OPEN HEARTH			BESSEMER			ELECTRIC			TOTAL			Calculated weekly production, all companies (net tons)
	Net tons	% of capacity	Net tons	Net tons	% of capacity	Net tons	Net tons	% of capacity	Net tons	Net tons	% of capacity	Net tons	
1954 Total	80,327,494	73.6	2,548,104	53.2	5,436,054	52.0	5,436,054	52.0	88,311,652	71.0	1,693,741	89.8	2,203,828
1955 Total	102,840,585	91.6	3,227,997	67.4	9,147,567	81.2	9,147,567	81.2	112,216,149	89.8	2,203,828	89.8	2,203,828
1956													
January	8,297,172	83.6	204,723	53.5	731,995	71.6	731,995	71.6	9,233,890	81.5	2,084,400	81.5	2,084,400
February	8,135,139	84.7	185,967	47.6	656,800	66.4	656,800	66.4	8,978,906	81.8	2,097,642	81.8	2,097,642
March	8,348,522	84.1	154,577	40.5	694,618	67.6	694,618	67.6	9,197,717	81.1	2,076,234	81.1	2,076,234
April	7,674,698	79.9	134,709	36.4	583,512	59.0	583,512	59.0	8,392,919	76.5	1,563,391	76.5	1,563,391
May	6,783,262	68.3	108,337	28.3	528,686	51.7	528,686	51.7	7,420,285	66.5	1,678,798	66.5	1,678,798
June	101,657,776	87.0	2,475,138	54.9	8,582,082	71.3	8,582,082	71.3	112,714,996	84.5	2,161,776	84.5	2,161,776
1958													
January	6,085,124	58.6	121,338	35.5	547,450	44.8	547,450	44.8	6,753,912	56.1	1,524,685	56.1	1,524,685
February	5,252,112	56.0	81,597	26.4	448,614	40.6	448,614	40.6	5,782,323	53.6	1,445,581	53.6	1,445,581
March	5,595,944	53.9	122,317	35.7	533,361	43.6	533,361	43.6	6,254,622	52.3	1,412,000	52.3	1,412,000
April	4,875,619	48.5	109,433	33.1	547,989	46.3	547,989	46.3	5,532,991	47.8	1,289,741	47.8	1,289,741
May	5,602,123	53.7	110,366	32.3	588,670	48.2	588,670	48.2	6,301,159	52.7	1,422,384	52.7	1,422,384
June	6,378,942	63.4	88,125	26.6	660,413	55.8	660,413	55.8	7,127,480	61.6	1,661,417	61.6	1,661,417
July	5,712,587	55.0	114,218	33.4	593,600	48.6	593,600	48.6	6,420,405	53.7	1,452,580	53.7	1,452,580
August	6,481,815	62.4	134,135	39.3	670,388	54.8	670,388	54.8	7,286,003	61.1	1,644,696	61.1	1,644,696
September	6,769,660	67.3	103,194	31.2	737,518	62.3	737,518	62.3	7,610,372	65.8	1,778,124	65.8	1,778,124
October	7,705,543	75.0	148,458	43.4	873,779	71.5	873,779	71.5	8,517,278	73.8	1,990,469	73.8	1,990,469
November	7,572,555	75.3	145,867	44.1	850,896	71.9	850,896	71.9	8,569,318	74.1	1,997,510	74.1	1,997,510
December	7,764,000	74.7	117,000	34.2	832,000	68.1	832,000	68.1	8,793,000	72.9	1,971,000	72.9	1,971,000
1959													
January	8,280,985	77.1	120,005	39.5	729,675	63.7	729,675	63.7	9,317,385	74.3	2,103,247	74.3	2,103,247
February	8,540,000	88.0	129,000	47.0	757,000	73.1	757,000	73.1	9,603,000	84.8	2,401,000	84.8	2,401,000

Blast Furnace Output

(American Iron and Steel Institute)

Period	net tons			% of capacity
	Pig Iron	Ferro-manganese & Spiegeleisen	Total	
1950				
Ttl. Yr.	64,810,272	673,996	65,484,168	91.5
1951				
Ttl. Yr.	70,487,880	745,381	71,233,261	93.3
1952				
Ttl. Yr.	81,828,666	829,926	82,658,592	94.3
1953				
Total	74,987,721	865,038	75,852,759	95.5
1954				
Total	88,119,882	868,788	88,988,670	97.1
1955				
Total	77,114,978	868,788	77,983,766	92.7
1956				
January	6,387,608	46,981	6,434,589	91.6
February	5,899,518	41,491	5,941,009	85.2
March	5,100,609	41,548	5,142,157	70.8
April	6,873,064	50,584	6,923,648	93.7
May	7,245,650	69,909	7,315,559	100.8
June	6,977,457	58,614	7,036,071	100.1
July	7,268,743	65,841	7,334,584	101.0
August	7,301,134	664,341	7,965,475	88.9
1957				
January	7,209,547	72,826	7,282,373	98.9
February	6,596,133	61,973	6,658,106	100.0
March	7,179,100	67,779	7,246,879	98.3
April	6,810,102	60,784	6,870,886	96.3
May	6,879,881	65,566	6,945,447	94.2
June	6,593,326	66,266	6,659,592	93.3
July	6,625,901	66,031	6,691,932	90.8
August	6,719,703	61,988	6,781,691	92.0
September	6,569,074	58,837	6,627,911	92.9
October	6,454,450	65,028	6,519,478	88.4
November	5,711,242	68,637	5,779,879	81.0
December	5,212,624	69,175	5,281,800	62.8
1958				
January	7,857,011	782,660	8,639,671	91.4
February	4,785,269	69,175	4,854,444	62.8
March	4,016,276	47,968	4,064,244	58.2
April	4,418,778	45,175	4,463,953	57.8
May	3,787,907	39,302	3,827,209	51.3
June	4,048,328	26,468	4,074,796	52.7
July	4,396,285	26,463	4,422,748	59.1
August	4,277,515	26,668	4,304,183	55.7
September	4,799,965	31,374	4,831,339	62.1
October	5,001,042	31,348	5,032,390	67.8
November	5,875,995	36,963	5,912,958	76.9
December	5,907,888	39,275	5,947,163	79.5
1959				
January	6,025,385	47,505	6,072,890	78.6
February	5,729,644	46,456	5,776,100	63.5

Galvanized Sheet Shipments

(American Iron and Steel Institute)
(Net Tons)

Period	1956	1957	1958	1959
Jan.	269,464	235,902	186,649	279,244
Feb.	272,997	206,048	167,627	.....
Mar.	291,193	206,836	195,865	.....
Apr.	266,728	198,586	206,368	.....
May	272,741	206,657	231,318	.....
June	279,058	239,037	277,180	.....
July	.....	167,247	239,883	.....
Aug.	276,048	186,790	253,263	.....
Sept.	256,803	183,952	257,725	.....
Oct.	278,637	212,886	290,157	.....
Nov.	255,135	190,380	253,909	.....
Dec.	239,173	159,363	266,472	.....
Total	2,957,991	2,392,637	2,828,848	.....

* Combined with August figures.

Steel Castings Shipments

(Bureau of Census)

Period	(Short Tons)		
	Total	For Sale	For Own Use
1951	2,101,604	1,507,413	594,191
1952	1,925,116	1,476,352	448,767
1953	1,829,277	1,290,016	431,330
1954			
Total	1,184,096	880,158	303,938
1955			
Total	1,530,694	1,166,706	363,988
1956			
Sept.	155,046	121,705	33,341
Oct.	175,630	135,798	39,832
Nov.	164,114	126,900	37,214
Dec.	158,725	125,569	33,156
Total	1,931,987	1,512,290	419,697
1957			
Jan.	169,240	133,826	35,414
Feb.	154,932	121,667	33,265
Mar.	160,054	124,416	35,638
Apr.	162,498	124,549	37,949
May	164,575	125,431	39,144
June	153,647	119,353	34,294
July	122,018	90,037	31,981
Aug.	145,926	111,080	34,846
Sept.	139,002	105,611	33,391
Oct.	146,397	113,216	33,181
Nov.	127,115	98,436	28,679
Dec.	120,787	92,125	28,662
Total	1,766,191	1,261,301	404,890
1958			
Jan.	120,722	94,717	26,005
Feb.	103,297	79,708	23,589
Mar.	106,233	82,195	24,038
Apr.	91,464	69,121	22,343
May	87,002	66,086	20,916
June	92,681	71,624	21,057
July	68,802	48,618	20,184
Aug.	80,886	59,816	21,070
Sept.	85,277	64,586	20,691
Oct.	95,389	73,367	22,022
Nov.	85,267	65,788	19,479
Dec.	103,800	81,360	22,440

SHIPMENTS OF TIN-TERNEPLATE

(American Iron and Steel Institute)
(Net Tons)

Period	—Hot Dipped—		—Electrolytic—	
	1958	1959	1958	1959
Jan.	31,465	30,354	474,359	417,210
Feb.	28,451	.....	397,861	.....
Mar.	36,794	.....	419,102	.....
Apr.	43,670	.....	468,568	.....
May	37,628	.....	402,521	.....
June	42,850	.....	429,761	.....
July	45,481	.....	422,776	.....
Aug.	46,037	.....	464,439	.....
Sept.	43,217	.....	525,739	.....
Oct.	60,261	.....	763,361	.....
Nov.	14,596	.....	113,134	.....
Dec.	15,842	.....	150,942	.....
Total	447,396	.....	5,040,190	.....

Steel Ingot Operations

(Percentage of Capacity as Reported by American Iron & Steel Institute)

Week	Beginning	1956	1957	1958	1959
Jan. 6...	97.6	98.4	56.1	76.2	...
Jan. 13...	98.6	96.4	57.0	73.6	...
Jan. 20...	99.0	96.6	55.5	74.6	...
Jan. 27...	100.4	97.6	54.0	72.6	...
Feb. 4...	99.3	97.1	54.0	76.9	...
Feb. 11...	99.1	97.7	53.5	83.8	...
Feb. 18...	98.8	97.8	50.9	83.7	...
Feb. 25...	98.8	96.0	54.6	88.5	...
Mar. 4...	99.3	97.1	53.1	90.3	...
Mar. 11...	100.0	93.8	52.4	92.0	...
Mar. 18...	100.6	93.5	52.5	...	...
Mar. 25...	99.5	92.4	50.6	...	...
Apr. 1...	96.6	90.6	48.6	...	...
Apr. 8...	97.7	90.3	48.5	...	...
Apr. 15...	100.9	90.4	46.8	...	...
Apr. 22...	100.2	88.7	47.9	...	...
Apr. 29...	100.5	87.0	47.8	...	...
May 6...	96.4	86.7	49.4	...	...
May 13...	95.2	84.2	52.3	...	...
May 20...	95.3	86.4	56.4	...	...
May 27...	97.3	88.0	58.1	...	...
June 3...	96.3	87.5	62.4	...	...
June 10...	96.7	86.5	84.0	...	...
June 17...	93.4	85.2	64.9	...	...
June 24...	93.0	84.0	61.7	...	...
July 1...	84.9	78.5	51.0	...	...
July 8...	12.3	78.7	53.4	...	...
July 15...	12.9	79.3	54.9	...	...
July 22...	14.6	79.4	57.3	...	...
July 29...	17.0	79.4	57.8	...	...
Aug. 5...	16.9	79.8	58.8	...	...
Aug. 12...	57.5	80.6	60.5	...	...
Aug. 19...	87.5	82.1	62.6	...	...
Aug. 25...	95.8	82.2	63.5	...	...
Sept. 2...	97.0	81.0	61.7	...	...
Sept. 9...	98.7	81.9	65.9	...	...
Sept. 16...	100.6	82.1	65.6	...	...
Sept. 23...	100.6	82.2	67.3	...	...
Sept. 30...	101.6	82.6	70.4	...	...
Oct. 7...	101.8	82.8	71.6	...	...
Oct. 14...	100.9	80.9	74.2	...	...
Oct. 21...	101.4	80.2	74.8	...	...
Oct. 28...	101.2	79.7	75.0	...	...
Nov. 4...	101.3	78.0	74.5	...	...
Nov. 11...	100.6	77.7	74.5	...	...
Nov. 18...	100.2	76.0	74.1	...	...
Nov. 25...	100.1	72.1	73.7	...	...
Dec. 2...	101.1	71.5	73.5
Dec. 9...	101.3	69.2	73.5
Dec. 16...	102.0	67.7	74.5
Dec. 23...	94.3	53.7	74.5
Dec. 30...	97.3	59.0	73.6

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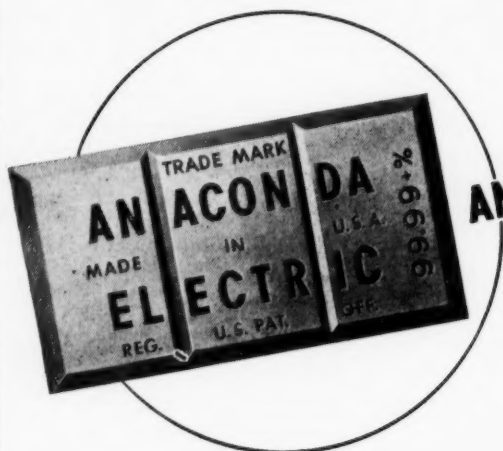
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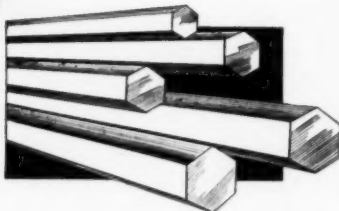
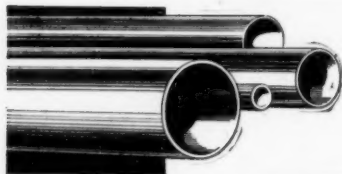
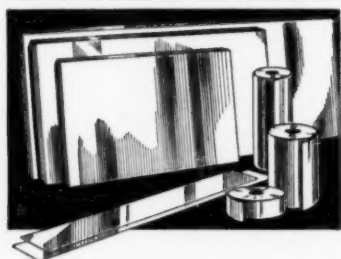
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